

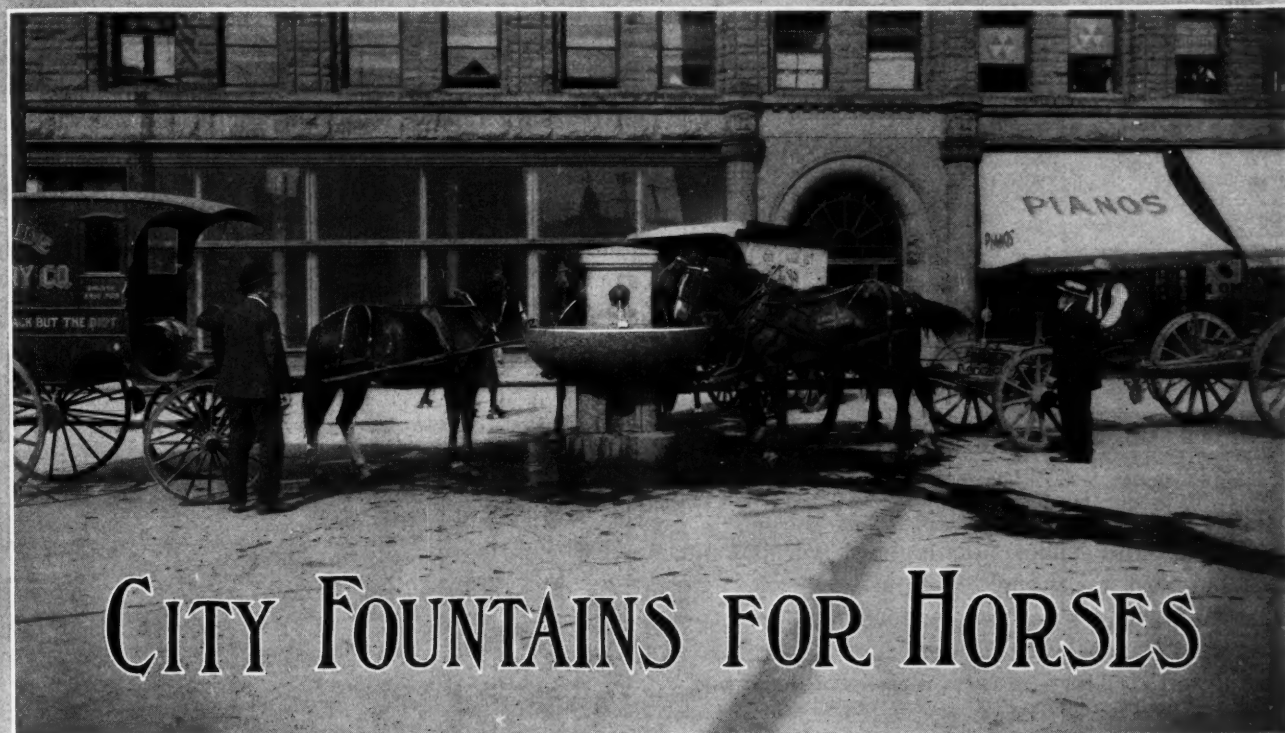
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CITY FOUNTAINS FOR HORSES

HUMANE ALLIANCE FOUNTAIN AT PORTLAND, OREGON

NEW YORK CITY, although its streets are probably traversed by more automobiles than those of any other city of the country, still finds it necessary to make provision for the continuous use of horses, not only in its paving, but in other ways as well. Among these is the providing of drinking fountains or troughs, and several score of these are now maintained, some by the city, some by the Humane Alliance and some by the American Society for the Prevention of Cruelty to Animals; the last named maintaining forty-two, of which, there were erected during 1908, by donations to the Society, five bronze fountains, five granite troughs and three iron troughs. The city supplies water for these free of charge, and the cost of maintaining the plumbing in order and of whatever care is necessary is met by the Society. Before erecting a fountain in the city, any individual or society must obtain the consent of the city authorities as to location and the approval of the Municipal Art Commission as to design. Those erected by the Society, however, remain as its property.

The American Society for the Prevention of Cruelty to Animals (known locally as the "society with the long name") has not only secured the erection of fountains

and troughs in this city, but furnishes photographs and information as to cost and gives general advice to other cities. For instance, it recently furnished advice to parties in Omaha who erected six bronze fountains there, and also to a donor of a fountain in Council Bluffs. It does not, however, place or maintain fountains outside of New York.

Drinking fountains for horses have been supplied by the National Humane Alliance to cities in thirty-seven States, and within the next three months fountains will be placed by them in the other nine States. The funds for this work were furnished by a bequest made by Herman Lee Ensign. Only one type of fountains is furnished by the Alliance. They are delivered to the city where they are to be erected free on board cars, and the city, or private individuals in it, pay the cost of setting up, which amounts to from two to three hundred dollars, according to local conditions. The fountains are of red granite, made by the Bodwell Granite Company, of Vinalhaven, Me., and cost \$1,000 each. The stone is polished and trimmed with bronze. The complete fountain is composed of five pieces, namely, cap, die, bowl, plinth and base, weighing altogether



NATIONAL HUMANE ALLIANCE FOUNTAIN, ALLEGHENY, PA.

about five tons. The total height from the pavement is 6 ft. 8 in.; the diameter of the bowl, which stands 4 ft. 1 in. above the ground, is 6 ft. At the base are four small bowls for dogs. The fountains are set on concrete foundations varying from four to seven feet, according to the nature of the soil and climate.

When the Society first began its work it had to seek locations for these fountains; but at the present time they have fifty applications—a greater number than they can fill. During 1907 thirty-one fountains were put out; last year the number was smaller, as they did not care to sell their securities at the low prices then prevailing. Altogether, sixty-eight fountains have been given away. All but four of these were of the large size and type described above, but four of them were of a smaller size. An effort is now being made to se-

cure a suitable type of a smaller fountain, to cost about \$500, the large size, with six-foot bowl, which accommodates eight horses at a time, being unnecessarily large for cities of small size. A bronze electrolier is placed on top of the cap of some of the fountains. The firm of Cabarett & Co., 342 West 14th street, New York, designed the electrolier shown in the illustration.

For the location of a fountain or trough an open space is preferred, such as is shown in the illustration of the one in Brooklyn; but such localities are seldom available. In most instances the fountain must be placed on the sidewalk, where it is set flush with the curb. Quite a number have been placed on the slips or docks along the New York water front where trucking is heavy.

A fountain should not be set where the pavement drops down rapidly toward the curb, as this makes it difficult to stop the horses, and the fountain, as well as the horses, are apt to be injured. A location where the natural grade of the pavement falls away from the fountain is preferred, but it is difficult to find. The best that can usually be obtained is a nearly level section of pavement.



NEW TYPE OF BRONZE FOUNTAIN

Approved by Art Commission of New York. Several have been placed in the metropolis.



OPEN SPACE, FULTON, LIBERTY AND TILLARY STREETS, BROOKLYN, N. Y.

The solid granite fountains are by far the most substantial. The bronze fountains are cast hollow and are usually filled with concrete to give them strength and stability. Concrete is generally used for the foundation except in a few instances where the donor has preferred the more expensive stone. The foundation is given a superficial area somewhat greater than that of the fountain and is made three or four feet deep. In the case of bronze fountains the foundation is carried about 8 inches above the curb, and the basin of the fountain is raised about a foot above that, so that the wagon pole, when two-horse teams are drinking, may pass under the basin. In the case of the granite basins, these are made generally about 18 inches high so that the pole may pass over their top, as is shown in the illustration. In spite of the concrete reinforcement, the bronze fountains are not as

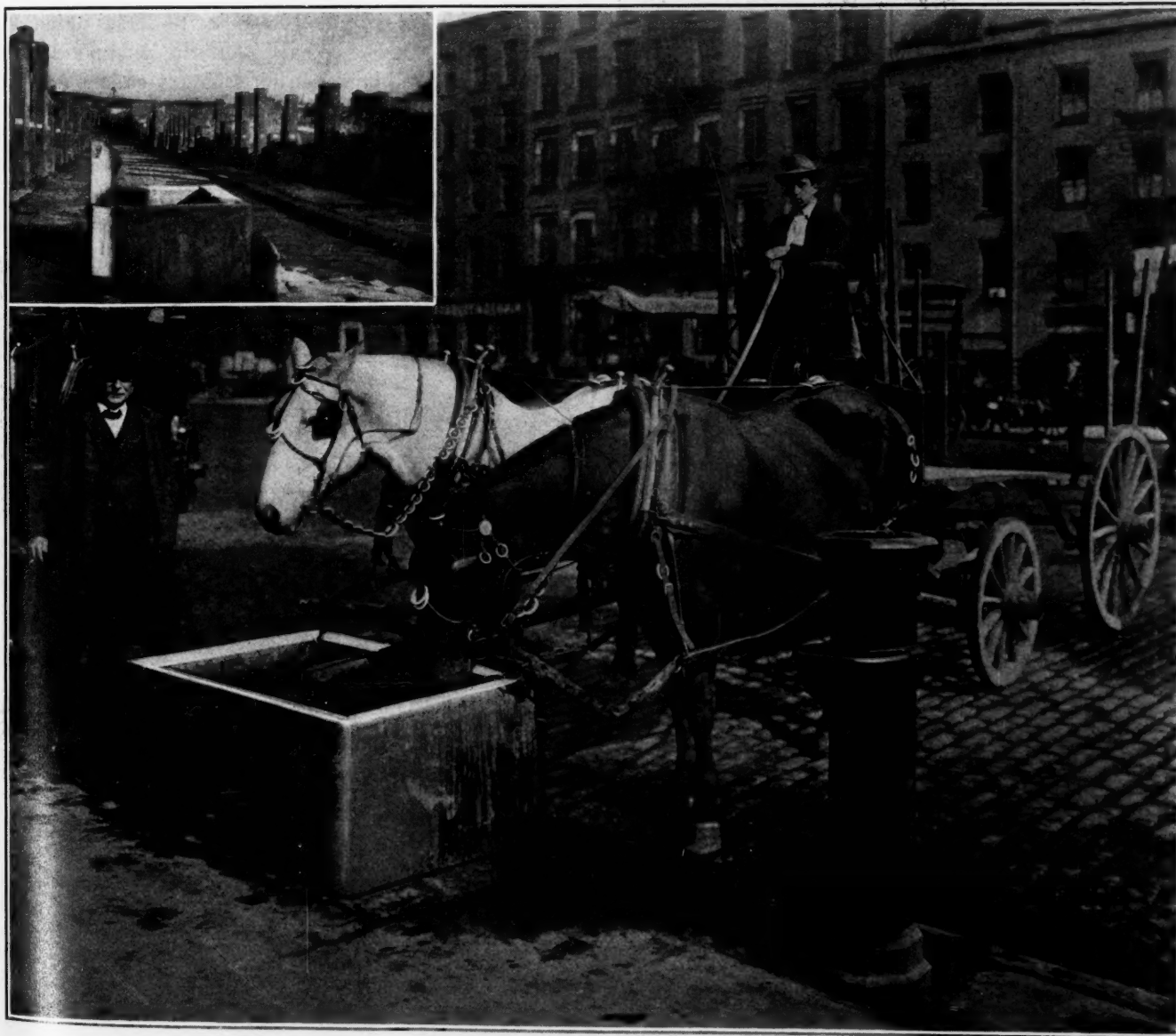
substantial as the granite and are almost sure to be knocked out of position by the teams sooner or later.

At one side of the fountain and a few feet from it in a convenient location is a manhole, in the well of which are placed the controlling valves of the water and drain pipes; the former being a $\frac{3}{4}$ -inch pipe and the drain being 2 inches in diameter. Provision must be made for removing from the gutter the water which is splashed from the basin.

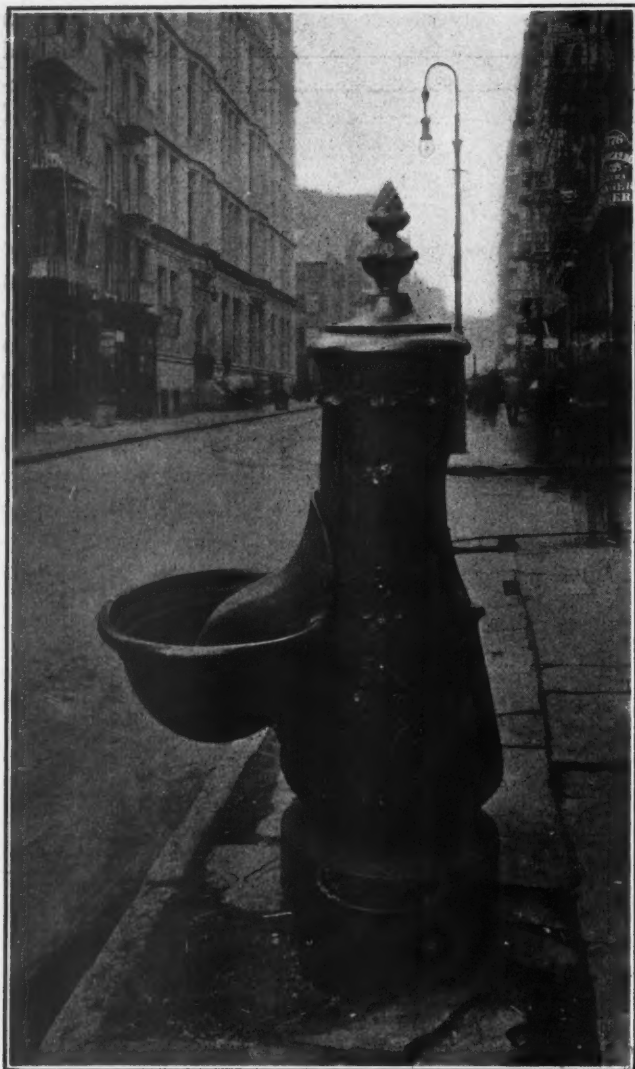
The cost of setting varies according to the location, but is generally between \$200 and \$300. This cost includes the item of paving in front of the fountain. Granite blocks set on concrete, with tar and gravel joints, are found to be the best material to withstand the hard usage to which paving is exposed in front of these fountains.

The granite trough shown in the large illustration belongs to the New York City Humane Society, and cost \$350. Cheaper and equally satisfactory granite has been used for other troughs in several locations, however, at a cost to the society of \$160. The bronze dolphin fountain cost \$1,250.

Regarding designs for fountains, there have been in times past differences of opinion between the Society and the Municipal Art Commission as to what is most desirable. Both agree that the plain granite trough of generally rectangular shape is one of the most suitable forms. It is low priced, entirely practical and has the artistic merit of being simple in outline with no ill advised attempts at ornamentation. It is interesting to note the persistence of this practical and artistic design for centuries; the small illustration in the upper left-hand corner of the large cut of the granite basin being a photograph of a trough found in Pompeii. One type on which the Society for the Prevention of Cruelty to Animals and the Commission disagree is an iron one shown in the illustration and made some twenty years ago by the Mott Iron Works. These are inexpensive, costing only \$105, and are claimed by the Society to be convenient and substantial and to have given little trouble for maintenance during the twenty years they have been in operation. The Art Commission, however, considers them as a horrible example of the inartistic, objecting to their ugly shape and to the filigree work on them, which



GRANITE BASIN FOUNTAINS, NEW YORK, 1908. POMPEII, FIRST CENTURY
Illustrating persistence of simple, artistic and practical form



OLD TYPE OF IRON FOUNTAIN
Disapproved by New York Art Commission

is without significance, and will not give permission for the erection of any more. This Commission is the official judge of what is artistic in municipal structures; its members are recognized leaders in various branches of art; and it is but right that their decision should be final. We doubt if many will dispute it in the case of the iron fountain just referred to.

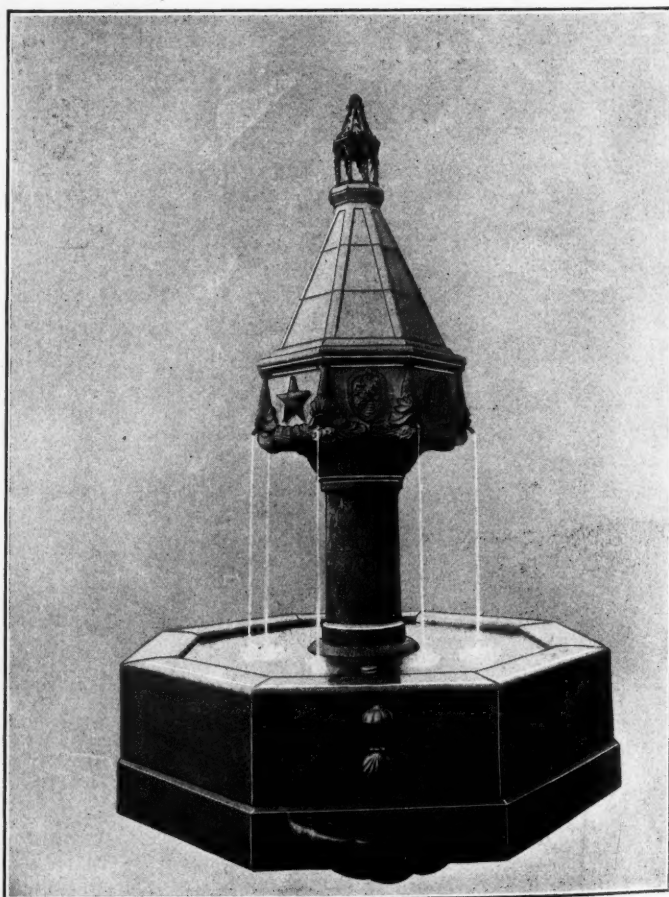
Among the higher grade types approved by the Art Commission is the bronze fountain ornamented with dolphins which is shown in one of the illustrations. These are unquestionably handsome in appearance and receive the unqualified approval of the Commission, and are objected to by the Society only because they are expensive in first cost and may prove to be so in maintenance also, as they may be knocked over by heavily loaded trucks carelessly driven. Moreover, in some parts of the city anything as valuable as bronze is likely to be stolen, and any part of the fountain which can be knocked off and sold will probably meet this fate sooner or later (as did the tail of a bronze horse on one of the Society's fountains on upper Broadway).

Two years ago, as the result of a competition, a prize was awarded to a design by H. Van Buren Magonigal for a fountain similar to but somewhat simpler than the dolphin design, and honorable mention was made of de-

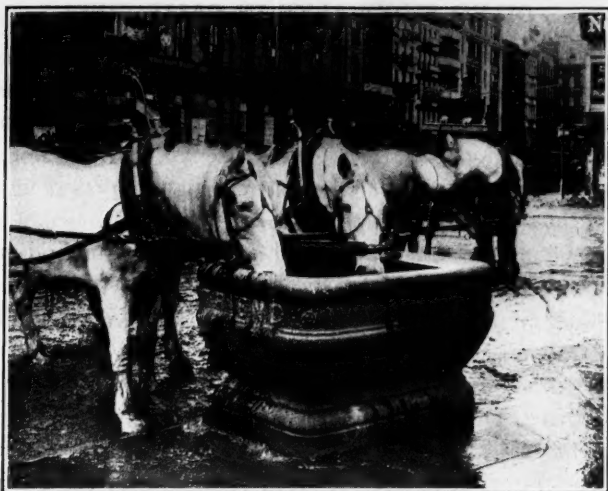
signs by John S. Humphreys and William Sanger. The first of these is furnished by Grove Heriman, of Plainfield, N. J., for \$554. The same manufacturer will supply the Humphreys design for \$1,250, and the Gorham Company, of Fifth Avenue, N. Y., will supply the Sanger design for \$500.

Sanitation in the use of the fountains is provided for in all of those maintained by the Society, water continually entering the basin both day and night, winter and summer. Some fountains owned and maintained by the city are equipped with a ball check valve which permits fresh water to enter only when the level of that in the basin has sunk below a certain point; but this is objected to by the Society as being unsanitary. The amount of water used or wasted at fountains has been the source of some complaint by the Water Department. The American Society for the Prevention of Cruelty to Animals recently received a letter from I. N. De Varona, chief engineer of the Board of Water Supply, stating that 414,000 gallons of water a day went to waste at the Society's forty-two fountains. How many horses drink at a fountain in one day is not known; but at the stations maintained by this Society during hot weather, where water taken from hydrants is supplied to horses in buckets, as many as 500 horses have been supplied in one day. Assuming that 500 horses drink each $2\frac{1}{2}$ gallons a day, it appears that only about one-tenth of the water entering the basin is actually drunk. As to whether the balance is actually wasted is a question of sanitation.

Drinking fountains are sometimes surmounted with street lights, but those placed by the Society are for



GEO. C. STONE MEMORIAL FOUNTAIN, DULUTH, MINN.



GRANITE FOUNTAIN, CITY HALL SQUARE, NEW YORK

furnishing water only. Moreover provision is made for horses alone, as the officers of the Society do not approve of placing bowls at one side of the base of bronze fountains for dogs to drink from. They claim that dogs do not use them; the secretary of the Society stating that in the course of his twelve years' connection with the work he has never seen a dog drink from one of these basins. He considers that they are located too close to the sidewalk and become foul unless frequently cleaned, and so do not answer the purposes for which they are intended.

This subject of sanitation in connection with fountains deserves more consideration than it generally receives. The demand of the Society that water run continuously through basins used by horses is due partly to the belief that glanders might otherwise be spread, and other equally serious results follow.

A WATER WASTE CONTRIVANCE

A NEW YORK architect, Mr. Ernest Flagg, believes he has discovered a contrivance the use of which has done considerable toward assisting in the waste of water which undoubtedly takes place in the buildings of that city. It has been shown by numerous investigations, and frequently stated in municipal reports, that the ball-valves of closet flush-tanks are probably the cause of more waste of water than any other plumbing fixture. These valves rely upon the flotation of a copper ball to close them, and the force of this can never amount to more than a few ounces. After a certain time the valve often becomes corroded, or floating particles of dirt lodge against the seat, or one of the joints of the rods which seat the valve cease to work freely, and the valve no longer closes entirely. This causes the water to continually trickle out and this leaking would naturally cause a singing sound which would testify of its existence and would probably be annoying to the occupants of the building. This, Mr. Flagg believes, is prevented by a "hush pipe," a small pipe about 6 inches long which muffles the sound and conceals the existence of the leak which may therefore continue for years without detection. He recommends that the use of the hush pipe be forbidden by city ordinance or the Water Department, as one step toward discovering and preventing waste.

HAVERHILL, MASS., WATER WORKS

Financial Statement for 1908—Duty Obtained With High Duty Pumping Engine in Regular Service—
Reducing Water Waste

THE seventeenth annual report of the Board of Water Commissioners of Haverhill, Mass., for 1908 shows an excellent condition of affairs financially. The total cost of the plant to date has been \$1,463,047.37. Of this, however, bonds have been issued for only \$900,000; and the sinking fund for meeting these now amounts to \$355,166.64. This leaves \$544,833.36 as the net indebtedness of the city for the plant.

During the year the total receipts from water rates were \$96,157.65. The other receipts included about \$5,000 for services and repairs, \$3,500 for interest on deposits, and numerous other items bringing the total of miscellaneous receipts up to \$9,948.20. (A side light on the economy of maintenance is given by the item of \$7.74 received for apples, \$187.50 for grass and hay, \$73.96 from the sale of old junk, etc.) The total receipts for the year were \$106,105.85.

The general maintenance of the plant, which includes three pumping stations, totaled \$29,125.90. Special construction in connection with two of the pumps cost \$503.39. New mains and extensions, services and meters (which would seem to be chargeable to improvements and extensions), cost \$19,379.05; \$6,560 of which was taken from the cash on hand from the previous year, leaving \$12,819 of the income of 1908 spent upon new construction; \$18,000 was put into the sinking fund and \$43,840 was paid out in interest and bond redemption.

During 1907 a 6,000,000-gallon horizontal, cross-compound, flywheel pumping engine was purchased, the guaranteed duty of which was 150,000,000 foot pounds per 1,000 pounds of steam. A test run of this was made in April of that year and the duty was found to be 149,403,000. The deficiency in duty was allowed for in the payment by deducting the cost of the additional coal corresponding thereto, capitalized at 6 per cent, the coal being charged at \$4.50 per ton, which amount was calculated to be \$162. The record of this pump for the complete year of 1908 illustrates a common experience, but one which is too seldom taken into account in the preliminary study of proposed pumping outfits. This is the failure of any pumping engine to maintain, during actual service, the duty obtained in a test run. Although the test duty in this case was practically 150,000,000, during the year 1908 the highest average duty for any month was 111,302,461; and during one month the duty fell below 85,000,000. It should be said in partial explanation of this that during the month first referred to, although the pump was running every day, its average daily run was but 9 hours and 29 minutes, and that during the other month referred to the pump was in operation but ten days, averaging 9 hours and 51 minutes operation per day. While this will partially account for the lower duty obtained, since the amount of coal used in banking fires and getting up

steam detracts considerably from the efficiency of the fuel, yet these conditions are more or less common to a considerable number of plants. This is largely due to the fact that a new pump is generally designed to be of capacity sufficient for several years to come, and hence of considerably greater capacity than the present needs. It is probable also that the pump was not operated at just the speed which would develop its highest efficiency. This is shown by comparing duties during five months of the year when the efficiency was highest. Using round numbers only, when the rate of pumping in gallons per 24 hours varied from 6,000,000 by only 38,000, the duty was about 111,000,000; when the variation was 84,000, the duty was 110,000,000; when the variation was 110,000, the duty was 108,000,000; when the variation was 128,000, the duty was 103,000,000 and when the variation was 125,000, the duty was about 99,000,000. It is undoubtedly true that in a large plant with a considerable number of pumping units, all but one of these can be worked at their rate of maximum efficiency throughout the entire 24 hours. But in the case of a small plant with only one or two engines in a station, it is apt to lead to uneconomical conclusions to assume that the estimate of cost for coal, for instance, can be based upon the securing of the guaranteed efficiency in regular service.

During the spring of 1908 a canvass was made of one section of the city for the purpose of reducing waste of water. Two hundred and eighty-eight owners were notified of defective fixtures, 242 of which fixtures were water closets, 78 were faucets, 11 were tanks, and 6 were broken pipes. Most of these were remedied by the owners with but little protest.

The city is to be commended for the considerable number of stand-pipes which they have installed for filling watering carts, there being fifty-four of these in the city. With this large number there should be no excuse for tampering with the fire hydrants, thus avoiding one of the serious obstacles to the maintenance of these in proper working order in a large number of cities. Even these stand-pipes, which are especially designed for this service, showed effects of the rough usage given them by watering-cart men, as seventeen leaks in them were repaired during the year. On the other hand, inspection showed but three fire hydrants which required such attention.

NEW STREET LIGHTS FOR BOSTON

TWENTY-ONE magnetite lamps of 6.6 amperes have been installed as an experiment on Tremont and Boylston Streets and Commonwealth Avenue, Boston; and in Park and Copley Squares and the Common. G. E. flaming arc lamps are being tried. The magnetite lamps are on 25-foot bishop's crook poles, and the G. E. flaming arcs on 50-foot poles. The company which furnishes the street lighting has erected these to enable the city to decide whether it desires to substitute the magnetite lamps for part or all of the 3,800 Gilbert arc lamps now in use. The magnetite lamps are claimed to give twice as great illumination as the present arcs.

OILED SIDEWALKS IN CALIFORNIA

THERE would seem to be more reason for anticipating success in the use of oil on sidewalks than in using it on streets, because of the lighter wear on the former, is the opinion of Mr. M. C. Geisenhofer, Superintendent of Streets of San Leandro, Cal., expressed in an article in *Pacific Municipalities*, the official organ of the League of Pacific Municipalities. The method employed, as described by him, is briefly as follows:

The first experiment in oiling the sidewalks in San Leandro was made about four years ago. At first no particular kind of oil or method of application was followed, but any convenient oil was heated and spread on the sidewalk, after which sand or fine gravel was thrown over it to keep it from running into the gutter. It was found that applying fine gravel or sand as soon as the oil was spread was objectionable, as it absorbed the oil and prevented it from soaking into the body of the sidewalk. Later a Mr. John Driver, of that city, constructed special machinery with which to spread the oil and roll the sidewalks, and the use of his machinery and methods have now been employed on about four miles of sidewalks with excellent results.

In Mr. Driver's method the sidewalk is first macadamized by using a rock base about four inches thick, upon which is spread one inch of fine screenings, the base and screenings being each rolled separately. The sidewalk is graded on an incline of one-half inch to the foot, so that a twelve-foot walk is six inches higher on the property line than at the curb. Care is taken by using a straight edge to get a perfectly plane surface. Water is used in the rolling in order that the macadam may be packed solid. After drying out, a coat of oil is applied and allowed to stand for three or four days, when it will be found to be pretty well absorbed. Not to exceed a half-inch of dry sand is then spread evenly over the surface and compacted with a hot roller. The roller, which weighs about 400 pounds, is kept very hot by means of a contained fire box in which a thin grade of crude oil is used as a fuel. The oil used for this first application must be not less than 14 degrees gravity and be heated to at least 100 deg. Fahr. After a lapse of about five days a second coat of oil is applied, this oil being of 11 degrees gravity and containing not less than 60 per cent asphaltum and being heated to about 125 deg. Fahr. before applying. After the hot roller has been applied to this second coat, common street dust is thrown onto and swept over the surface in order to thoroughly dry it. This work should be done in early summer if possible.

A twelve-foot sidewalk fifty feet long constructed in this way costs about \$20. Mr. Geisenhofer states that such a sidewalk is elastic and therefore easier under the foot than cement; that it is not so seriously affected by growing trees because of its elasticity, and that it improves with time, the oil turning into a hard, tenacious gum which binds the whole sidewalk into one solid mass.

The cost would probably be greater in the East, the freight on asphalt-base oil being considerable.

CHAMPAIGN-URBANA WATER WORKS

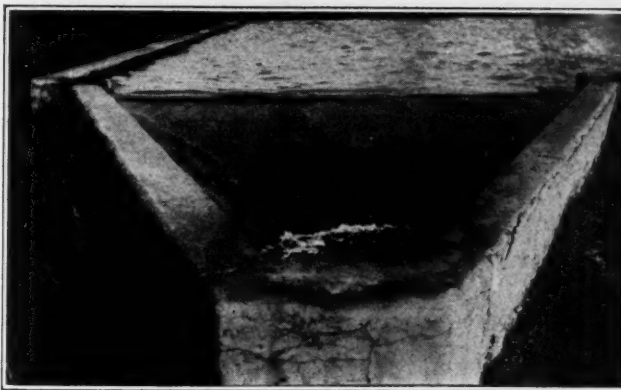
Underground Supply—Wells Pumped by Steam, Electric and Belt-Driven Pumps—Iron Removal by Aeration—Most Services Metered

THE Champaign and Urbana Water Company, of which Mr. F. C. Amsbury is superintendent, supplies two Illinois cities from which it gets its name. These have a total combined population of 23,000 or 24,000, and form practically one community. An underground source of supply is tapped by twelve eight-inch wells about 160 feet deep. Each of these wells has its own separate direct-acting pumping head. Both Downey and Luitwieler pumps are used, with long rods extending to valves at the bottom of the wells. A few of the pumps are single-acting, but most are double-acting.

Four of the wells are located along one side of the main pumping station. The pumps in these are connected by belts, running in tunnels underneath the ground, to a main shaft, also in a tunnel, and this in turn is driven from the main engine.

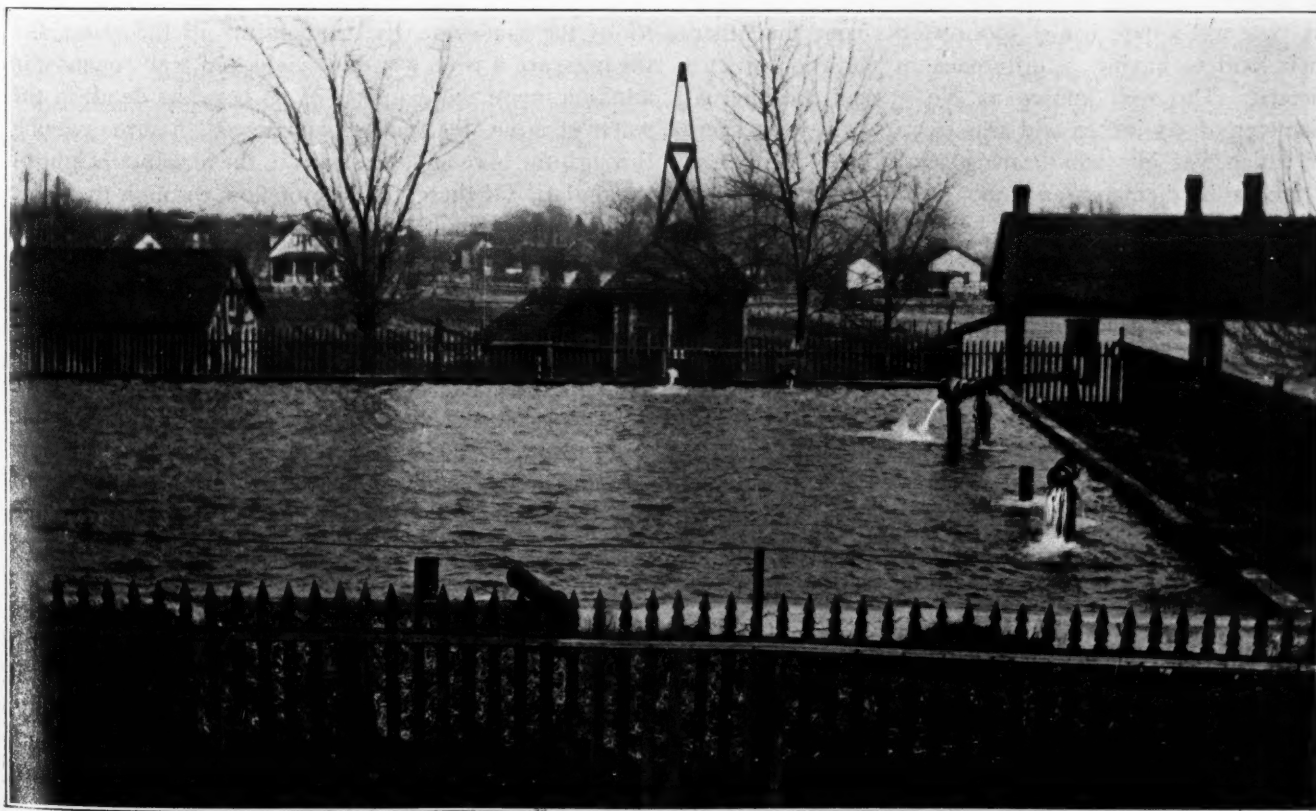
Three of the pumps are run by steam heads, the steam pipes being carried in tunnels and thoroughly jacketed. The other five pumps are operated by electric motors which receive their current from a generator in the main station.

Water from all the wells is delivered to a 250,000-gallon reservoir. As all underground water in this section contains more or less iron, which it is quite desirable to remove, aeration is resorted to. From the reservoir mentioned above the water flows over a weir and down a sloping concrete slab which exposes it to

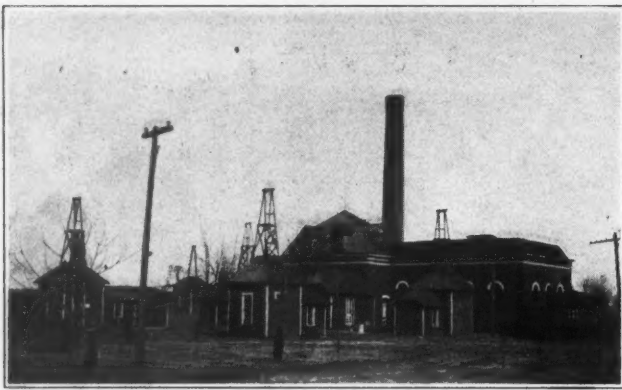


AERATING WEIR. CONCRETE SLAB IN FOREGROUND, IN ANGLE OF V the air in a thin sheet. From this it passes to a second reservoir of 750,000 gallons. This method of aeration is fairly effective, but does not accomplish all that could be desired, and it is proposed to provide other arrangements before long.

In the main pumping station is a Corliss engine which is direct connected to a generator which supplies power for pumping and lighting. To it is also belted the jack shaft above mentioned, and in addition at times a 1,500,000-gallon triplex pump. A 2,500,000-gallon Laidlaw-Dunn-Gordon steam pump is used for most of the main pumping service, however, the triplex and a 1,250,000-gallon Worthington steam pump being used as a reserve. The domestic pressure maintained is 50 pounds and the fire pressure 100 pounds. Two Chandler & Taylor 100-h.p. boilers and one 250-h.p. Brunson boiler supply steam for the station. The pumpage is about 1,377,000 gallons per day, or 59 gallons per capita on a basis of 23,000 population.



UPPER RESERVOIR OF CHAMPAIGN-URBANA WATER COMPANY



MAIN PUMPING PLANT AND WELL HOUSES

A large majority of the services are metered. The minimum charge is 5 cents per thousand gallons and the maximum charge 25 cents per thousand gallons, with a minimum annual charge of \$5. Champaign has 190 fire hydrants and Urbana 122, for which an annual charge of \$40 each is made. These are spaced approximately 400 feet apart. In case of fire some representative of the water company is always in attendance.

MUTUAL INTERFERENCE OF WELLS

Effect Upon the Flow of Certain Wells by Closing Others in Their Vicinity—Fissures and Porosity of Sandstone—Other Conditions Affecting Flow

THE results of some experiments carried on by Mr. H. J. Llewellyn Beadnell in an oasis of the Libyan desert to study the mutual interference of artesian wells are described by him in a recent number of the *Geological Magazine*. The first of his observations was made on two wells, one being 570 meters from the other, their outlets having a difference in elevation of 1.8 meters. The well known as No. 5 had an internal diameter of 5.5 inches and was 645 feet deep, 310 feet of which was in water bearing sandstone. No. 6 was 8 inches in diameter and 480 feet deep, 200 feet of which was in sandstone. These two wells had been flowing continuously for a considerable period, and during the experiment neighboring wells were kept shut down and, it is believed, did not affect the observations in any way. Well No. 5, which discharged 114 gallons per minute, was kept closed for twelve hours and the effect observed on No. 6. When No. 5 was first closed No. 6 was discharging 61.2 gallons per minute. This discharge increased to 68.4 in two hours, and kept on increasing more slowly until in twelve hours it had reached 83.7 gallons per minute. Well No. 5 was then allowed to flow again and in one hour the discharge from No. 6 had fallen to 78.4 gallons per minute, and in twelve hours had fallen to 64 gallons per minute. This showed an increase of flow from No. 6 of about 37 per cent in twelve hours, and after opening No. 5 it fell during the next twelve hours to almost its original flow.

Other observations were made on two wells known as No. 4 and No. 42, which were 835 metres apart, or

more than one-half mile. The outlet of No. 42 was 1.18 meters lower than that of No. 4. No. 4 was $4\frac{1}{4}$ inches in diameter and 463 feet deep, 63 feet in sandstone, and No. 42 was 6 inches in diameter and 715 feet deep, 225 feet in sandstone. Previous to the experiment No. 4 was flowing 36.75 and No. 42 was flowing 68.5 gallons per minute. No. 42 was closed for thirty-six hours. At the end of 30 minutes the flow from No. 4 had not perceptibly increased, but a slight increase was seen at the end of one hour, and at the end of thirty-six hours the increase amounted to nearly 30 gallons per minute, or between 8 and 9 per cent. The author attributes the less sensitiveness in this case to the greater distance between the wells and to the lesser difference in their outlet levels; also conjecturing that the position of the wells with regard to the direction of underground flow, the relative depth of the bores, both total and that in sandstone, all had something to do with this result.

A remarkable instance of interference is recorded in the case of two ancient wells sunk on the crest of an anticlinal fold only 88 meters apart, which had been cleaned out but a short time before. The difference in level of the outlets was 2.07 metres. The opening or closing of the lower well produced an almost instantaneous effect on the higher, amounting to over 10 per cent within 30 seconds. In one instance the flow of the upper well increased 100 per cent in 30 minutes and was trebled in 24 hours; falling to within 50 per cent of its normal within 45 minutes after reopening the lower well.

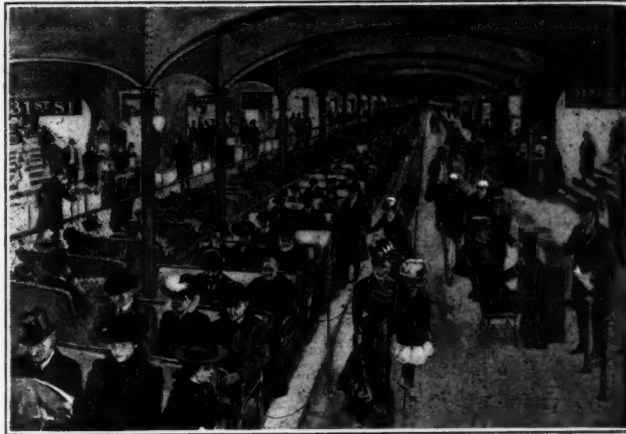
In discussing the subject of interference, Mr. Beadnell states that the rate of flow through an underground sandstone depends upon a number of conditions, the most important being the size and shape of the pores between the component grains, the water holding capacity of the sandstone, the temperature of the water and the pressure it is under. The yield of a well depends, in addition, upon the diameter of its bore, its depth in the water stratum, the number and size of fissures passing through the bore and, most of all, the absolute height of the outlet. Of these, the rate of flow through the stone is the most difficult to ascertain beforehand, as it may vary considerably within comparatively short distances.

Geologists differ in their opinions concerning the importance of the effect of fissures. The author believed that in some cases the bulk of the water was obtained through these, considering that the experiments above described demonstrate this, since it is hardly conceivable that otherwise the closing of a well would in a few minutes produce an appreciable effect at a distance of thousands of feet. But he does not believe that such fissures are *essential* to a flowing well. In the case of say in a 10-inch well, penetrating water bearing rock 10 feet and discharging 700 gallons a minute, the velocity of flow would be $5\frac{1}{2}$ feet per second through the rock at the bore itself, but at one mile distant it would be only 18 inches an hour, or 36 feet per day. The relatively rapid flow near the bore, however, must, if there are no fissures, mean a very considerable loss of head.

CONTINUOUS TRAINS FOR SUBWAYS

ABOUT thirty-five years ago Horace Greeley suggested the conveyance of passengers by moving platforms, but it was not until the Chicago World's Fair, in 1893, that such a contrivance was put into actual public operation. During this exposition nearly three million people were carried on such a platform; and at the Berlin Exposition, in 1896, and at the Paris Exposition, in 1900, several million passengers were carried. This method of transportation has been urged as a solution of the Brooklyn Bridge problem, and a few years ago was favorably considered for use in Thirty-fourth street as a feeder to the subway, but has not as yet been constructed. Mr. Bion J. Arnold, consulting engineer of the Public Service Commission, recently reported that New York's subway would not be satisfactory from a point either of efficiency or of income until travel on local trains was greatly increased. Some method of attracting passengers to the local service is needed; and the Continuous Transit Securities Company, the promoters of the moving platform, believe that this is the device needed to effect this.

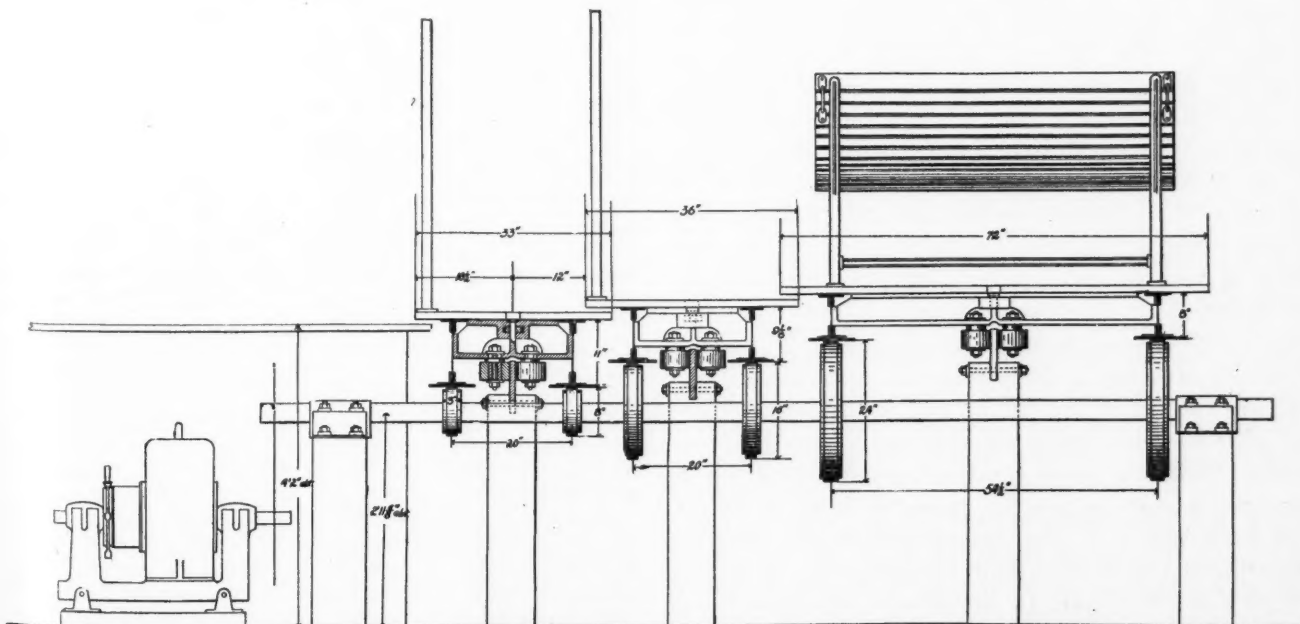
The moving platform is, to all intents, a continuous railway train containing seats, but no enclosing structures, and with the platforms in close contact. An essential structural difference is that the moving platform carries the rails, while the wheels are stationary and are revolved by stationary motors. Such a platform would be continuous throughout a section and would move continually day and night while in service. Parallel to the platform run one or more lines of platforms called stepping platforms, much narrower than the train and devoid of seats. The first of these would move at about three miles an hour, the next at six miles, and the train at nine miles. In reaching the train, therefore, a passenger steps successively from one platform to another moving three miles per hour faster. Actual tests show that ordinarily active persons can do this readily; and in any event, there would seem to be no danger of injury.



UNDER BROADWAY, SOUTH FROM THIRTY-FIRST STREET

Passengers could enter or leave the train at any point, and every store along the route could have a platform communicating directly with the train. Although the speed of nine miles an hour seems very slow, it must be remembered that there are no stops and no waiting for trains, so that one could travel a half mile on this during the $3\frac{1}{2}$ minutes which he might have lost in waiting for an ordinary train.

The diagram shows quite plainly the very simple contrivance by which the varying speed is given to the several platforms. As to cost, it is claimed that there would be no appreciable difference in first cost between a four-track subway of ordinary equipment and a similar subway equipped with express trains and moving platforms. Mr. Lewis P. Stillwell, a consulting electrical engineer, has estimated that the amount of energy required to transport one passenger on a subway train would transport 26 on a moving platform, and that such a platform could carry about 70 per cent more passengers than the two tracks of the subway. There is little danger of entire cessation of service, since there are a very great number of motors, and the failure of one or two would not affect the service.



MOVING PLATFORM—TREBLE SPEED

INFORMATION FOR TAXPAYERS

How Memphis, Tenn., Spends Its Income—Amount Paid by
Average Taxpayer Toward Each Department
—Value Received Therefor

JUST how the expenditures of Memphis, Tenn., have been apportioned during the years 1903 to 1908 has been set forth in tables prepared by Mr. C. C. Pashby, Chief Clerk of the City Engineering Department. An effort was made to state this in a way which would cause it to be easily intelligible to any citizen. For this purpose a typical property assessed at \$2,000 was assumed, and the portions of the tax on it which were credited to each of the several items are given in a table. This shows that the owner of such a property last year paid \$3.69 for interest on the bonded debt, \$3.73 toward the Police Department, \$4.35 for Fire Department, \$3.73 for Board of Health, \$7.12 for Streets, Bridges and Sewers, \$1.12 for City Hospital, \$2.24 for the Lighting Department, 62 cents for the Water Department and \$1 for salaries, printing, expenses; a total for general purposes of \$27.60. In addition he paid for special purposes, \$4 for public schools, \$4 for parks, 60 cents for Cossitt Library, \$2 for North Memphis Levee, a total of \$10.60 for special purposes, and a combined total of \$38.20. These do not represent the entire expenditures of the several departments; since some of them have outside sources of income, such as the returns from privileges and pick-up taxes enjoyed by the Board of Streets, Bridges and Sewers. This \$2,000 property is taken as a typical home of a citizen whose income is from \$1,500 to \$1,800 per year, situated on a 30-foot lot in a good neighborhood with pavements, sidewalks, lights, etc.

As to the returns to the taxpayer from these, that from interest on the bonded debt is probably divided among many of the city's betterments. The direct return from the Police and Fire Departments will be nothing for the average citizen, but without them the safety of himself and his property would be endangered. For the amount paid to the Board of Health he has his garbage and ashes removed and his streets sprinkled, his neighbors are prevented from doing those things which would be a nuisance to him, his food and milk are inspected and his health is to a large degree safeguarded by the attention paid to contagious diseases. Of the amount paid for streets, bridges and sewers, \$1.68 went toward constructing new streets, 70 cents toward constructing subways and new buildings, 79 cents to repairs of streets, \$1.27 to cleaning streets, 7 cents to maintenance of sewers, 29 cents to the upkeep of several public squares and buildings and 43 cents to administration expenses of the engineering department, including inspectors, watchmen and material. (Incidentally it would require the street construction assessment for 90 consecutive years to pay for paving in front of the 30-foot lot assumed.) The amount paid to the Lighting Department was for his share of lighting the streets of the city and that paid to the Water Department was for flushing sewers, sprinkling and flushing streets, ex-

tinguishing fires and operating public fountains. The \$1 went for salaries and other general expenses of the Government, advertising, etc. If our average citizen had only one child he certainly received \$4 worth of education. For the 60 cents Cossitt Library tax each member of the family was privileged to hold a card and obtain by it such fiction as he might desire, as well as more solid reading and the use of a reading room and reference books. The \$4 for parks seems a rather heavy charge, but these assessments are being used in developing on a cash payment basis a magnificent system of parks by which all may benefit.

There are some cities which make a practice of informing the taxpayers each year what percentage of the tax assessment is apportioned to each of the several city departments, and we believe this is an excellent practice. It would be an improvement even upon this to add, possibly on the back of the tax bill, the functions of and duties performed by each of the several departments, somewhat as is done above in the case of Memphis, in order that each citizen might appreciate what he was getting for each sub-division of his taxes.

Exempting Bonds from City Debt Limits

THE Citizens' Union of New York City, which maintains a legislative agent at Albany and endeavors to act for the citizens at large in watching and to a certain extent controlling legislation there, has issued a brief explanation of the Constitutional Amendment which it was instrumental in having passed at the last session of the Legislature relative to exempting from the city's debt limit, bonds employed in the construction of self-sustaining utilities. There appears to have been some fear on the part of the conservative citizens that the city's credit would suffer by the adoption of such an amendment, but the union states that adequate safeguards are provided against any such calamity, which safeguards they outline as follows:

First.—No bond may be issued outside the debt limit. They must be issued inside the debt limit, and cannot be exempted till demonstrated to be self-supporting.

Secondly.—In order that a bond may be exempted from the debt limit it must be shown that the city is receiving out of the property for purchase of which the bond was issued, current net revenue sufficient to pay the interest on the bond and an annual instalment into a sinking fund to retire the bond at maturity. This sinking fund must actually have been established and maintained. In other words, the property must have demonstrated its capacity to take care of the interest and principal, with no expense to the taxpayers. This interest and principal, it should be remembered, will be paid out of the proceeds of property which would not have been in existence if the bond had not been issued.

Thirdly.—If, at any time after it has been excluded from the debt limit, the bond ceases to be self-supporting, it goes back within the debt limit.

Fourthly.—The additional borrowing capacity secured by the exemption of bonds heretofore issued can be used for no other purposes than those for which the bonds were originally issued. This means subways and docks.

Fifthly.—The amendment is not self-operative. It does not in itself provide the method by which it shall be determined whether a bond is self-supporting under its provisions. This must be provided by law, and the Legislature will be called upon to put into this law additional and supplementary safeguards.

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Readers are invited to contribute to the MUNICIPAL JOURNAL AND ENGINEER, either in the form of special articles or of letters discussing matters of current interest.

It is also desired that the facilities furnished by the reference library in this office should be widely known and freely used by those interested in municipal affairs. Visitors will be welcomed and provided with conveniences for search, and inquiries by mail will be promptly dealt with.

APRIL 14, 1909.

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Information for Citizens

THIS is the title of a pamphlet issued by the Baltimore Police Commissioners, in which they give the locations of the various station houses and their telephone calls; instructions as to how to make complaints, report accidents, etc., to headquarters; and other per-

inent information, including the legal rights of citizens as to making arrests. This is an excellent example which should be followed by other Boards in Baltimore and by other cities everywhere. Information might be given by the Fire Department as to the location of fire alarm boxes and instructions for sending in a call; also advice as to what it is best to do in case of incipient fires which might be extinguished by the owner. The Department having charge of collection of ashes and garbage should send notices to each citizen giving the day and approximate hour when the collectors would call at his house for these. Such circulars, put in a form convenient for preservation and reference, would, we believe, do much toward increasing the popularity as well as the efficiency of public service and inspiring a feeling of personal relationship between the citizen and the government.

Milwaukee Refuse Incinerator

MILWAUKEE, WIS., a few days ago awarded a contract for building a refuse incinerator which will be the largest in the country. The specifications for this were outlined in some detail in our issue of February 10, showing that the plant was to have a capacity of 300 tons of refuse a day, and that the surplus heat was to be used in developing steam. Four bids were received on March 31, having been submitted by the Universal Destructor Company, representing the Meldrum Simplex furnace; the MacDonald Engineering Company as agents for the Horsfall Destructor Company, of England; Lewis & Kitchen, of Chicago, and the Power Specialty Company, of New York, agents for the Heenan furnace. The details of these bids are given in the contract pages of this issue, and are worthy of careful study by all who are interested in refuse disposal.

It will be remembered that the specifications for this plant were unique in the method adopted for comparing bids, this being along lines which have been employed in numerous cases during recent years for comparing bids for pumping engines; the general principle of which is that of comparing annual costs, consisting of expense of operation and fixed expenses based upon cost of construction. In this case the figures used for comparing bids were the sum of 10 per cent of the cost of construction and the net cost of operating the plant; such net cost being the difference between the gross cost of operation and the value of the steam generated, estimated at 4 cents per 100 pounds evaporated from and at 212 degrees. The amount of refuse upon which the calculation was based was 100,000 tons per year, this being the capacity of the furnace and about the amount which it is expected will be treated. It is the calculation based upon this method which is of special interest in this letting.

For convenience in referring to the bids, they will be designated as (A) a Meldrum Simplex furnace, (B) a Horsfall furnace, (C) a furnace (two plans were submitted) proposed by Lewis & Kitchen, and (D) a Heenan furnace.

The guaranteed rate of burning per square foot of

grate area per hour, taking the average annual refuse (see MUNICIPAL JOURNAL AND ENGINEER, February 10, page 221), was 57.3 pounds by A, 80 pounds by B, 39 by C, and 60 by D. The guaranteed evaporation per pound of refuse was 1 pound by A, 0.75 pounds by B, 1.45 pounds by C and 1.1 pound by D. These guaranteed evaporations represent a revenue value from the steam of 80 cents per ton of refuse for A, 60 cents per ton for B, \$1.16 per ton for C, and 88 cents per ton for D. About one pound is considered a reasonable amount, 0.75 pound is conservative, in view of the performance of Horsfall furnaces elsewhere, but the probability of obtaining 1.45 pounds is considered by Dr. Hering, the consulting engineer, as being doubtful, as the Milwaukee refuse does not contain enough available heat units to secure this amount of evaporation. (The official test of the West New Brighton destructor, described in our issue of September 30, 1908, showed an evaporation varying from 1.10 to 1.41, respectively, in five different tests. The New Brighton refuse is shown by analyses to be more favorable in composition for steam producing than is the Milwaukee.)

The steam guaranteed as required for operating the plants varies from 3,200 to 6,480 pounds per hour. This difference is presumably accounted for by differences in design of forced draft and other apparatus, which would be determined only by a careful study of the plans.

The bidders also guaranteed that the cost of labor and of steam power required to operate their respective plants would not exceed 73 cts. per ton for A, 43 cts. for B, 84.68 cts. for C, and 47.6 cts. per ton for D. This variation is, of course, to a considerable extent, due to the differences in the estimated amounts of steam required, as stated above; the cost for steam alone being 20.72 cts., 11.52 cts., 17.6 cts., and 10.24 cts. for the several bids, respectively. This leaves the labor costs as 52.28 cts., 31.48 cts., 67.08 cts., and 37.36 cts. per ton, respectively.

The difference between the revenue value of the steam and the cost of labor and power is taken as the net revenue from the plant. This amounted to 7 cts. per ton of refuse for A, 17 cts. for B, 31 1-3 cts. for C, and 40.4 cts. for D.

The assumption being that 100,000 tons were to be burned a year, the annual net revenue from the incinerating plant would be 100,000 times these last quantities, or \$7,000, \$17,000, \$31,333.33, and \$40,400, respectively. Subtracting these from 10 per cent of the several bids for construction, gives the net annual costs as \$10,498.71, \$1,921.80 minus \$13,796.23, and minus \$22,961.55; the last two being an actual profit due to the operation of the incinerator. This shows the proposition of D to be much the most desirable for the city, and the contract was accordingly awarded to this bidder. It was estimated that there would be an additional cost of \$15,000 per year for handling the refuse at the work, weighing, hoisting, dumping, etc.; these not being included in the guaranteed amounts of labor required at the furnace. Even with this addition, the proposition of bidder D shows a net profit of \$7,961.58. We doubt

whether ever before in this country any one has guaranteed a net profit from the operation of a garbage incinerator plant, all expenses being included except that of collecting the garbage and delivering it at the plant. This, of course, does not refer to reduction processes.

In connection with such a calculation, it is worthy of more than passing notice that such results were obtained by assuming a return from all the steam generated. This value varied in the several bids from \$60,000 a year to \$116,000 a year; being \$88,000 in the case of D, the successful bidder. We do not know whether the Milwaukee authorities have yet made any definite plans for utilizing this \$88,000 worth of steam, but we question very much whether it will ever be utilized so as to return that amount in actual value to the city. Even in England, where the utilization of steam from refuse incinerators has been most thoroughly and successfully tried, it is found that the full utilization of the steam generated is practically impossible. Even where the refuse is stored so as to be fed to the furnaces at a uniform rate, it differs so much in character from load to load that, even with expert stokers and other attendants, it is impossible to generate the steam at a continuously uniform rate. This means that either the power must be used for such purposes that it may fluctuate considerably and continuously, or an auxiliary coal plant must be operated irregularly and uneconomically to make up the varying deficiencies in quantity of steam; or the amount of steam used continuously will be the minimum generated at any time, and all above this will be wasted.

If we neglect the item of revenue from steam evaporated, we find that the annual cost of incinerating garbage by the Heenan furnace (bid D), as guaranteed, will be \$17,438; the cost of labor will be \$37,360; and the total annual cost of operating the furnace will be \$54,798. This does not include the cost of power to operate the plant, since it may be assumed that the furnace will furnish ample steam for this. Adding to this \$15,000 for the cost of other labor about the plant, we have a total cost of \$69,798. Dividing this by 100,000 tons gives us the cost per ton of 69.8 cents. Figured in this way the cost has a more familiar look, this being about what the operation of the best of incinerating plants in other cities is probably costing.

When these specifications were first submitted to the various manufacturers of furnaces, the novel features were objected to by each of them; but it is stated that each of the bidders now believes that this was an eminently fair way of comparing bids on refuse destructors. We think there can be no question that a comparison of bids on the basis of annual cost, excluding the value of the steam generated, is far preferable to that based on first cost of plant only. It would seem to be desirable also to make some allowance for the value of the steam. How much weight this should have is in our opinion still a question open to argument, but one which the experience of Milwaukee, as well as of the plants at West New Brighton and Seattle, should do much toward furnishing an answer to.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest Under Consideration of City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

Regulating Use of Chains on Auto Tires

Albany, N. Y.—Automobilists from all sections of the State made a strong plea at the hearing before the State Highway Commission for the retention of the non-skid chains on automobile tires. The autoists contended that it would be too dangerous to use automobiles on wet and slippery roads without the non-skid chains. Henry Edmund, of London, England, a member of the Institute of Civil Engineers and of the Institute of Electrical Engineers of London, spoke for the autoists, saying he had much experience with the use of chains abroad, and that in some parts of England they were required by law. He said the effect of the chains upon the roadways abroad was less injurious than steel studded tires which had been experimented with upon roads in England.

Routes of Maryland State Roads

Baltimore, Md.—The most important meeting of the State Road Commission since its creation was held April 3, when routes were selected for State roads in all but three counties. A resolution was passed providing that the actual construction of the roads, as far as practicable, shall begin on such ends of all roads to be improved as lie closest to the centers of greater population.

Sixty-Mile Driveway in Tennessee

Knoxville, Tenn.—The two most important measures recently passed by the Legislature relating to the interests of the citizens of Jefferson County were the compulsory education measure and a bill authorizing the County Court to issue \$150,000 additional pike bonds to complete the present system of good roads, inaugurated a few years ago, when \$30,000 worth of bonds were issued and sold and about 58 miles of road were completed. With the additional \$150,000 bonds expended on her road system Jefferson County will have the best roads of any county in East Tennessee. With the completion of a pike road from Straw Plains through New Market, Jefferson City, Talbot Station and connecting with the Hamblen County pike system, there will be an all-pike drive from Rogersville, in Hawkins County, through Hamblen and Jefferson counties, and connecting with Knox County's pike, or a good drive for wagons, buggies and automobiles extending out of Knoxville for about 60 miles.

Pavement Wants Repairs

Boston, Mass.—Holes in the asphalt pavement in Tremont street to the number of 278 were recently counted. The largest hole was in front of the building of the Boston Herald, whose representative compiled the statistics.



HOLES IN ASPHALT ON TREMONT STREET, BOSTON, MASS.
Courtesy of the Boston Herald

Experimental Road for Ohio

Columbus, O.—The Legislature has allowed State Highway Commissioner Wonder \$10,000 for road building experimental work, and the first test will be made on the road into Shepard. In response to an invitation from the Commissioner, leading manufacturers throughout the country have agreed to send samples of their surface building material, which will be given a tryout in this experiment. It is proposed to improve the road for a distance of 400 feet. The product of the competing companies will be designated by markers so that its comparative value will be known. Commissioner Wonders selected this road because of the heavy traffic over it. A number of such tests will be made, the object being to ascertain which material is the best to use in road building in the State.

City Would Lay Pavements, Conditionally

Des Moines, Ia.—City officials claim that the city suffers from high prices on paving work, and will seek legislative authority to enable the city to do its own work where it can be done cheaper than it can be done by contract. Commissioner John MacVicar, former Mayor of the city, has charge of this department.

Kinds of Pavement in Manhattan

New York, N. Y.—The report of George W. Tillson, the Chief Engineer of the Bureau of Highways of the Borough of Manhattan, shows that the paved streets in the borough at the present time measure 439.39 miles, of which 253.80 miles is sheet asphalt pavement, 42.29 miles asphalt block, 10.09 miles wood block, 90.36 miles granite block, 22.02 miles trap rock, 9.63 miles Belgian block, 10.40 miles macadam, and 0.79 mile cobble pavement. During the official year 1908, 15 contracts for regulating, grading, etc., were completed. The Chief Engineer also reports that the actual cost per square yard for maintaining 1,188,344 square yards of pavement out of guarantee was \$0.177 per square yard, as against a much higher rate for the year 1907. There were 773 openings made in the pavement to lay and overhaul mains, 22,754 openings to lay and repair services, 4,422 to construct and repair railways, making a total of 27,929 openings. One of the principal works finished last year was the repaving of Seventh avenue, from 110th to 153d street, with asphalt block pavement, and the result is a magnificent thoroughfare with a roadway 80 feet wide and a park 10 feet wide in the center. The improvement materially enhanced the value of the property along this avenue.

Hydrangea Boulevard

Seattle, Wash.—Residents of Sunset avenue, West Seattle, have decided to plant hydrangeas at intervals of 25 feet in the parking strips on both sides of the street for a distance of a mile. The street will be paved with asphalt and it is the ambition of the residents to make it the finest boulevard in the city.

Bondsmen Held Liable

Utica, N. Y.—Dudley avenue from the West Shore Railroad to James street was paved in 1904 with Obispo asphalt by the Interstate Paving Company, and the company guaranteed the pavement for 10 years. To fulfill this contract the company gave a bond in the sum of \$7,000, which is dated May 19, 1904. The sureties are M. W. Van Auken, who justifies in the sum of \$14,000, and Charles I. Williams, who justifies in the sum of \$7,000. The pavement has not stood very well and it is in need of extensive repairs. The Common Council directed the company to make the repairs, and the Commissioner of Public Works reported to the Council that he had directed the company to do so, but that it had not complied; also that there are many defects in the pavement. At a recent meeting the Common Council directed the Corporation Counsel to notify the bondsmen to make the needed repairs or the city will make them and charge the expense to the bondsmen.

SEWERAGE AND SANITATION

Police Make Sanitary Inspection

Alexandria, Va.—The annual sanitary inspection of the city was begun April 5 by the members of the Police Department. Yards, back alleys and other places are to be thoroughly inspected and each member of the force has been furnished with books by Chief Goods with instructions to make a thorough inspection and report all places found in an unsanitary condition.

Best Sewer System in United States?

Davenport, Ia.—Davenport has the best sewer system in the United States and has more miles than any other city of its size, according to Henry Beuck, Assistant Engineer. In support of his statement Mr. Beuck points to the fact that out of the 14 sewer districts outlined for Davenport 13 have been completed and are in operation, while the plans and profiles for the last one have already been completed. Of this 71.58 miles of sewer laid 69.5 miles is sanitary sewer.

Butchers Must Have Permits

Galveston, Tex.—City Health Physician Trueheart has extended the time for enforcement of the butchers' endorsement license, and has sent out notices to all butchers containing, among other things, the following:

That no individual or firm, butcher, meat market, abattoir, packing house or cold storage establishment will be permitted to conduct their business in this city until they shall have first secured the indorsement permit provided for in said city ordinance.

No abattoir or other establishment for the slaughtering or preparing of meat or meat products will be recognized as sanitary that shall permit the roaming of swine around said premises or a pig pen nearer than one-quarter of a mile therefrom.

Clean Milk Campaign in Indianapolis

Indianapolis, Ind.—Dr. E. D. Clark, president of the Board of Health, says that in a general way the same policies will be followed as to the regulation of the milk supply as were followed last season. A very close supervision will be kept over the dairies as well as over the product of the dairies and all retailers of milk, including grocers, will be watched very closely. Last summer the number of children who died of such digestive disorders as usually come from the use of impure milk was 80 less than the average for a number of years, and the health authorities believe this was largely the result of the fact that better milk was demanded of the dairymen. The use of preservatives in milk has virtually been wiped out in the last year or two, "watered" milk has come to be rare indeed, and skimmed milk (sold as the real thing) is no longer common. And the Board of Health now proposes to continue the fight one step further and to see that the milk is clean and is produced under such circumstances as not to be a detriment to the health of children.

Condition of Cow Barns Improved

Louisville, Ky.—The recent visits of officers of the State Board of Health to cow barns in Lowell and vicinity are having the desired effect. The State inspectors found some of the barns in very bad condition, and the report that came to the local board of the result of the State inspectors' investigations caused the local board to increase their activity. The result is that cows and stables are being better cared for, and it has been firmly and solemnly impressed upon the producers that they must improve conditions to comply with instructions issued by the State Board of Health or get out of the milk business. The State Board of Health asserts that the milk business is too important a matter to neglect, and the local board must see to it that the recommendations of the State Board are carried out.

Requires Protection from Flies

Port Jervis, N. Y.—The Board of Health has passed an ordinance, the main provision of which provides that "no person, firm, association or corporation shall sell or expose for sale on the sidewalks, streets, public places or in any open or exposed place within said city, nor convey in a vehicle or otherwise, through or upon the streets of said city, any foods, food products or eatables liable to contamination from dust, dirt or flies, without having such foods, food products or eatables properly covered to protect the same from such contamination."

Health Committee Honors Health Officer

San Francisco, Cal.—A dinner was given, March 31, at the Fairmount, by the Citizens' Health Committee to Dr. Ruppert Blue of the United States Public Health and Marine Hospital Service. The banquet was the culmination of the campaign of health which has placed San Francisco in the forefront of the healthy cities of the world. The souvenirs were miniature rats and garbage cans. Dr. Martin Regensburger, president of the California State Board of Health, one of the speakers, presented figures to show the decrease in mortality resulting from the campaign. From 17 deaths per 1,000 before the earthquake and fire the rate has decreased to 12 per 1,000 at the present time.

Summit Plans for Drastic Health Code

Summit, N. J.—The revised sanitary and plumbing codes were passed on first reading at a recent session of the Health Board. The ordinances are believed to be the most drastic ever adopted by any municipality in this State. President Allan B. Wallace sought to have provision made in the health code which would prohibit any non-resident suffering from tuberculosis from taking up a residence in this city and also to have every case of tuberculosis reported to the person in charge of the Free Public Library. President Wallace's colleagues would not agree to the first proposition. After discussion, provision was made in the ordinances requiring physicians having cases of tuberculosis to report to the Board of Health as to whether or no the patient is a patron of the public library.

Councilmen Make Stereopticon Report

Trenton, N. J.—Trenton's special committee, inquiring into the various systems of satisfactorily disposing of the city's sewage is preparing to present an elaborate report to the Common Council. Pictures have been secured in all the cities visited by the committeemen and the most important plans of each as they appear in operation are included in views that will be shown the Councilmen at the conclusion of the investigation. It is proposed to have a canvas arranged in the Council Chamber and to show the pictures by stereopticon, while one or more of the members of the committee address the City Fathers in explanation. Such an elaborate report as the committeemen propose was never before undertaken by any previous commission.

Sewer Carries Rivulet

Washington, D. C.—A sewer has been constructed in Piney Branch Ravine, a valley wide and deep enough to carry the waters of the Potomac. The stream, however, is a mere rivulet, and is now carried in a concrete sewer of ordinary construction. As is usual in Washington, the invert of the sewer is lined with special vitrified brick.



SEWER IN PINEY BRANCH RAVINE, WASHINGTON, D. C.
Courtesy of the Washington Evening Star

WATER SUPPLY

Unmetered Water and Electric Connections Found

Batavia, Ill.—A report of experts engaged to investigate alleged theft of water and electric current contains a long statement of water connections and electric wires leading to factories in such a way that water and current in large quantities may have been used without registry on the meters. The report concludes with the recommendation that all water and electric meters be sealed and that all places where water is used for industrial purposes have detector meters in street, as near water mains as practicable; also that all meters be placed in a horizontal position.

Boston Water Mains in Danger

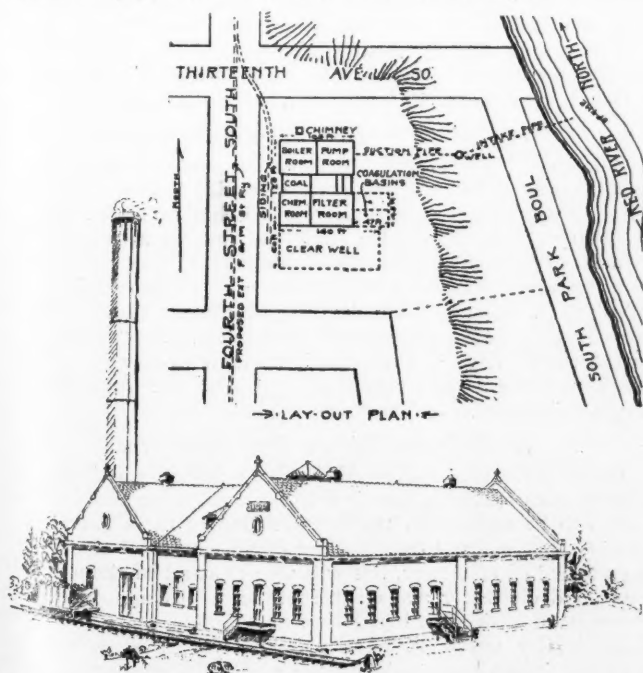
Boston, Mass.—The electrolysis of water mains in Boston and vicinity is said to be proceeding at a greater rate than ever before. The investigations made in 1907 by the Metropolitan Water and Sewerage Board show that the pitting and disintegration of the pipes by electric action have been serious, and that the destructive process is continuing even in places where insulating joints and other devices have been applied as a remedy.

Brooklyn Water Supply in Danger

Brooklyn, N. Y.—Half of Brooklyn's water supply may be cut off at almost any time, Deputy Commissioner Cozier informed the State Board of Water Supply at a hearing in the Corporation Counsel's office, to consider the question of building a new 72-inch main from Clear Stream to Amityville, L. I. "It is impossible to repair the old conduit because to do so would necessitate shutting off half of the daily supply," Mr. Cozier told the board. "If not repaired soon the old conduit is likely to give way, and I expect any day to hear of an accident which will make it necessary to shut off that conduit and the entire Ridgewood supply."

Fargo Votes for Water and Light Plant

Fargo, N. D.—In favorably deciding, by a vote of 1,900 to 200, to issue \$100,000 bonds, citizens, at an election, April 5, declared for municipal ownership of water works and a lighting plant. A new pumping station, a filtration plant and water mains will be built. The equipment for the lighting plant will be placed in the building containing the pumps. The need of a purer water supply was not seriously disputed and a mechanical filtration plant was acknowledged to be the cheapest means for accomplishing the end. The lighting proposition, however, was fought by the local power and light company, who in advertising space in the columns of the local press sought to convince the public that a municipal plant, if it gave service at lower rates than those of the power company, would not pay and would simply add a burden of debt to the city.



NEW PUMPING STATION AND FILTRATION PLANT, FARGO, N. D.

Suits for Rebates Follow Supreme Court Decision

Knoxville, Tenn.—W. R. Turner has filed a bill in Chancery Court for several citizens of Knoxville, seeking to collect rebates alleged to be due them as consumers of water furnished by the Knoxville Water Company. It is estimated that about \$173,000 is payable to consumers. The bill prays for an injunction restraining the Knoxville Water Company from removing to Boston its main office and funds collected in the city of Knoxville, and that a receiver be appointed to take charge of the funds collected locally by the company, and an attachment issue on the plant of the company, which, it is alleged, is now negotiating a sale with the city of Knoxville.

South Bend Drinking Water Pure

South Bend, Ind.—H. E. Barnard's report that the water of South Bend is pure should end the fear that the supply is contaminated. For weeks, while winter cholera was making hundreds sick, there was a feeling that the epidemic was traceable to the water supply of the city. Some of the reports were sensational. Mr. Barnard, after analyzing the water, adds: "This water is in excellent condition."

STREET LIGHTING AND POWER

Rates for Electricity in Ohio Arch City

Columbus, O.—That the Columbus Railway and Light Company is losing about \$60,000 a year in the commercial lighting department was the statement made by the company's attorney, H. J. Booth, before the Council committee on gas and electricity, which met to consider a revision of the rate for electricity. The present rate is a sliding scale, varying from 10 cents per kilowatt hour to 3 cents. It was expected that an effort would be made to have the minimum rate fixed at 5 cents; but no one but the attorney appeared to submit arguments.

Will Investigate Complaints of Gas and Electricity

San Francisco, Cal.—The Committee on Artificial Lights of the Board of Supervisors have received many complaints about excessive bills and poor service of gas and electricity. President John Britton, of the public service corporation, explained to the committee that gas bills were high during the winter on account of the unusually cold weather. As the city has no inspector of gas and electricity, experts will be employed to examine the gas for its lighting and heating values, test the meters and pressure and analyze them with a special view to determining the percentage of carbon monoxide. The gas company has tendered the experts the use of its laboratory.

Comparing Gas and Electric Street Lights

Scranton, Pa.—The Scranton Gas and Water Company is having erected in different places in the city three gas lamps, which are to serve as illustrations of the effectiveness of gas as a street illuminant. The lamps were authorized by Councils, the company standing the expense, with the idea that if the illumination proves popular, Councils will authorize the erection of more lamps throughout the city, to be paid for, which would mean competition on this branch of public service with the electric light company. The new lamps, or as much as can be seen of them in their present shape, are very similar to the old-fashioned gas lamps, only that the standard proper is of a light, silver color. It is proposed to have transparent street signs on the lamps and on one there will be a red light to indicate a fire alarm station. Some months ago, in Common Council, Charles Raine, Jr., chairman of the light and water committee, introduced a resolution calling upon the officials to prepare data showing the comparative cost of gas and electricity as a street illuminant.

Capacity of City Light Plant Increased Four-fold

Seattle, Wash.—The capacity of the city lighting plant has been increased from 5,000 to 16,000 horsepower, which may be increased in an emergency to 20,000 horsepower. This was done by making the new pipe line connections at the power plant at Cedar River, three miles below Cedar Lake. Two machines are now in operation at the power plant, one of 1,200 kilowatts and one of 4,000 kilowatts, with similar units in reserve. A duplicate transmission line is now being run from the city to Swan Lake.

Business Value of Good Street Illumination

Philadelphia, Pa.—Emphasizing the importance of additional lighting facilities, if the northwest section of the city is to maintain its supremacy as one of the biggest sectional mercantile districts in the city, the Northwest Business Men's Association is planning a campaign to obtain more lights along its principal streets. A canvass has been made by a committee regarding the lighting facilities of the section, and it was found that the number of electric lights average three to each block. The members of the organization think this number should be increased to five, and, if possible, eight, in a block, and are working along this line.

FIRE AND POLICE

Will Speed Up Small Fire Gongs

Bridgeport, Conn.—The Board of Fire Commissioners has voted to install apparatus for speeding up the gongs in the fire houses. At the present time the large alarm bells and the inside gongs are rung at the same time. Between each stroke there is an intermission of $2\frac{3}{4}$ seconds. There is considerable time wasted in waiting for the first round to come in before the apparatus can respond. With the proposed arrangement the small gongs will ring at a higher speed than the alarm bells, and so enable the firemen to get off to the fire in less time than at present. The alarm bells will continue to ring as at present.

Private Companies May Connect to City Alarm System

Chicago, Ill.—An ordinance has been passed authorizing the City Electrician to connect with the city fire alarm signal circuits, auxiliary fire alarm systems owned and maintained by responsible parties under certain conditions. Plans must be submitted by the applicant to the City Electrician, showing that the proposed connection will in nowise interfere with or lessen the efficiency of the city circuit. The party making the connection will be required to submit to all regulations made by the City Electrician and the apparatus will also be inspected by the Fire Marshal.

Plans of Private Fire Equipment to Be Filed

Dayton, O.—In accordance with a suggestion of the National Board of Fire Underwriters, the Service Board will make a record of all fire equipment owned by private parties connected with the city water mains. All owners of such appliances will be required to file drawings, showing the line of pipe and every connection made with it. The plans will be kept on file in the Department of Water.

London's Fire Brigade

London, England.—The annual report of the London Fire Brigade Committee states that during 1908 there were 3,238 fires, being 82 fewer than in the previous year. Those classed as "serious" numbered 61, equal to 1.88 per cent of the total number. The number of lives lost was 93, the same as in 1907, and of these 66 died or were removed before the brigade was called. The chief officer, Captain J. de C. Hamilton, R. N., in his report gives a list of 161 different causes of fires. The one being the most frequent was "light thrown down," which was the cause of 654. "Spark from fire" comes next, with 219, if the "unknown" 291 are not taken into account; "children playing with matches" caused 135 fires, and "children playing with fire" 73. In private houses 895 fires occurred, and, among trades, victuallers stood highest, being 69. The brigade consists of 901 firemen and 208 officers of all ranks, 36 men under instruction, as well as 279 assistants, consisting of coachmen, mechanics, pilots, clerks, etc. The total expenditure during the year was £29,330 on capital and £272,286 on maintenance. The amount raised from the ratepayers was £283,308, which represents a rate of 1.55d. in the pound.

Practical Demonstration of Need of New Alarm

Newburgh, N. Y.—Spurred to action by reason of the confusion of the fire alarm on the occasion of a recent fire, the Fire Department Committee of the City Council decided to install at once a new fire alarm in the city. This matter had been held up for months, but there will be no more delay. At the meeting it was generally conceded that, while the fire alarm had done good work in its day, it is very faulty at the present time. There is risk of absolute failure of the alarm, as the result of which a damaging conflagration might take place.

FINGER PRINT SYSTEM EXTENDED

Must Be Taken at All Stations in National Capital by Desk Sergeants—Necessary for Court Records

Washington, D. C.—Major Richard Sylvester, Superintendent of Police, will hereafter require desk sergeants at all the police stations to make finger prints of all persons accused of theft or attempted theft, those charged with serious assaults and those arrested for carrying concealed weapons. Heretofore only a limited number of prisoners have been photographed and measured at Headquarters. Photographs and measurements have been made only in more important cases of dishonesty and crimes in which the penalty is death or imprisonment in the penitentiary. The broadening of the work will mean that thousands of finger-print descriptions will be recorded in the future as against scores of them in the past.

Major Sylvester deems it necessary to have such records to present to the courts. It has often happened that a man arrested and sentenced for theft or concealed weapons managed to get behind the bars a second or third time, but having been arrested in different precincts was able to give different names and thereby escape severe sentences. It is believed that such persons will have little chance in the future to evade the penalties meted out to old offenders. Hereafter records taken by desk sergeants will be transmitted to Headquarters to form part of the general records of the bureau.

Police Have Current Events Record

Wilkes-Barre, Pa.—Chief of Police Grant J. Long has added another improvement to the system of records at Police Headquarters that will be of considerable assistance to the authorities in the future. It is to be known as the current events docket, and will contain a record of every important happening in the city that the Police Department comes in contact with. Murders, robberies, suicides, accidents and other matters of police interest will be entered under the proper dates and headings and will be indexed so as to be readily looked up. The book itself is of the loose leaf type now in vogue, and can be typewritten and removed from the covers when desired.

GOVERNMENT AND FINANCE

No Grafting in Council

Altoona, Pa.—The special committee appointed by Common Council to investigate Mayor S. M. Hoyer's charges of corruption against J. B. Rogers, H. J. Roberts and J. T. Cassidy, members of that body, after taking sworn statements from the accused, and getting the City Solicitor's opinion thereon, exonerated them. Rogers denied that he was a member of the firm furnishing sand to city contractors, and Cassidy denied that he had the sub-contract for curbing from street pavers, while Roberts' services as foreman for pavers did not constitute an offense.

Defalcation Leads to Thorough Audit

Baltimore, Md.—With a defalcation amounting to more than \$67,000 already assured as the result of an examination of the city books, extending through half a night, Mayor J. Barry Mahool called a halt on the apparently futile efforts of the city officials to determine how much the city stands to lose as the result of the peculations of William F. Downs, stock clerk in the City Register's office, who is now under arrest, and announced that he has engaged the services of the American Audit Company of New York to make a thorough examination of the books in the Register's office.

Would Keep Tab on City Employees

Baltimore, Md.—Mayor Mahool, having in mind the recent defalcation, says that it is his earnest hope that legislation will be enacted at the next session of the General Assembly that will not only require of all municipal employees a standard of efficiency, but will also demand of them previous good character and clean methods of living. Either in connection with such legislation or supplementary to it the municipality ought to have provided for it some system whereby it can keep "tab" on the men in its employ, so that it can be known at once whether they are living in such a way that the cost is in excess of their salaries.

CITY PUT ON BUSINESS BASIS

Rules for Council Meetings—Accounts of City Officials— Use of Requisition Blanks—Complaints in Writing

Hattiesburg, Miss.—At a meeting of the Hattiesburg City Council it was decided to put the city government on a strictly business basis, and a set of rules and regulations for the government of Council meetings and the conduct of general city business were adopted which would do credit to the largest railroad system in the country. The new plan is the work of Alderman C. F. Lassiter, of the Third Ward, who has spent about 20 years in the railroad service, and who is a stickler for system.

Among other things, the new rules provide that the first Council meeting in each month shall be given over to the reading of the minutes, allowing of salaries, electing officers, checking accounts and allowing bills. All accounts must be presented during the first session in each month. Each department of the city government is to be furnished with requisition blanks, which must be used in each case and properly signed by the heads of departments. These must be attached to accounts before presentation to the board for payment. All complaints on the part of citizens must be filed with the clerk of the board in writing, thus effectually shutting off the flood of oratory turned loose at the average Council session. All moneys collected for the city must be deposited weekly instead of monthly, as heretofore, and no employee of the city is to pay out any money for any purpose, this function being reserved exclusively by the Council. The accounts of all city officials are to be audited monthly before the meeting of the board, and the report from each department must be accompanied by the Auditor's certificate.

After the employees of the various departments of the city become accustomed to the new system it is believed that it will work satisfactorily and result in a snug saving to the city. The plan was adopted without opposition.

Court Says New York Has Ample Borrowing Capacity

New York, N. Y.—General Benjamin F. Tracy, referee appointed by the Supreme Court in the injunction proceedings to restrain the city from building the Fourth avenue railway, on the ground that the city's legal debt limit would not permit it, has rendered his decision. General Tracy places the debt margin on June 30, 1908, at \$106,205,714. According to Comptroller Metz, the debt limit at that date had almost disappeared. General Tracy does not include in the city debt bonds issued in anticipation of taxes, until five years have elapsed from the time of their issue. He does not charge against the debt liabilities incurred on account of contracts awarded until such time as is allowed for the completion of the works. The injunction case will probably be appealed.

To Force Prompt Payment of Taxes

Buffalo, N. Y.—Mayor J. N. Adam, in a communication to the Aldermen, has submitted a proposed charter amendment. The amendment provides that the holder of any tax sale certificate, at any time after the expiration of five years from the date of sale mentioned in the certificate, may bring suit against the owner of the property for which the certificate is issued for the sale of the property. Other holders of tax sale certificates against the property may join in and all may recover judgment. Upon the judgment being given the property may be sold under order of the court and the proceeds distributed among the certificate holders. The amendment is drawn in such manner that the purchaser of property at such a sale will be able to get good title. The object of the measure is to force the prompt payment of taxes.

Labor Union Favors Municipal Ownership

Philadelphia, Pa.—The Central Labor Union recently adopted a resolution expressing their view that all municipal work should be performed directly by the municipality without the intervention of contractors. The union also adopted a plank by which it pledged itself to secure municipal ownership and operation of water, gas and electric light plants, telephones, and all street railroads, overhead, surface and underground, to be operated by the municipality in the interest of the people.

Makes a Big Showing

Haverhill, Mass.—According to a published statement, showing the cost of operation and maintenance of the city, the new administration working under the new commission form of government has made an approximate saving of \$29,337.54 for the first quarter of the year 1909 over the same period in 1908 under a different administration and the old form of city government. These figures, although they are but approximate, are particularly gratifying to the advocates of government by charter, and the friends of Mayor Edwin H. Moulton and the Municipal Council, for it demonstrates that they have had in mind the interests of the city from the taxpayer's standpoint.

To Keep Indigents Out of City

New Orleans, La.—Mayor Martin Behrmann has introduced in the City Council an ordinance which makes it unlawful for any rail or water carrier to bring into New Orleans any indigent person. A large fine or imprisonment is provided for the violation of the ordinance. The measure defines an indigent person as "one without means of support, an idle person living without employment and in need of subsistence, a person without any fixed domicile, and who wanders about the streets, wharves and landings, beer houses, market places, sheds and uninhabited buildings, and who are not able to satisfactorily account for such conduct."

Mayor Issues Orders Against Lobbyists

Portland, Ore.—Mayor Harry Lane has seriously interfered with the army of lobbyists at the meeting of the Council by ordering them to cease conversing with the Councilmen during the proceedings. He told them that if they had anything to say to the Councilmen to invite them out of the Council chamber. The "third house," which comprises nearly a score of professional lobbyists, representing various "interests," had become a nuisance at all Council meetings. They draw the attention of the Councilmen from the proceedings and cause much disturbance in their efforts to secure special legislation which they are seeking.

Town Refuses Money for Plotting System

South Framingham, Mass.—The Board of Assessors is somewhat displeased over the action taken by the town in rejecting the proposition of the Board recommending a grant of \$300 for the purpose of taking initiatory steps for plotting each parcel of property so that a more equitable assessment could be made, and which would be the beginning of a system of levying taxation per square foot in the business and manufacturing sections of the town, at the same time assessing farm property by the acre as at present. The Finance Committee of the town reported adversely on the proposition advanced by the Assessors, asserting that the scheme would entail a cost of maybe \$10,000 or \$15,000. The Assessors, however, maintain that even if the municipality were put to considerable expense in establishing such a system it would be more than doubly recompensed with the town divided into city plots and real estate assessed for something like its real value rather than as farm property.

Many Illinois Cities Want Commission Form of City Government

Springfield, Ill.—A trip of more than 2,500 miles, taking in Galveston, Tex., Des Moines, Ia., and other cities, has been decided upon by the Senate Committee on Municipalities for the purpose of allowing a sub-committee to investigate the merit of the commission form of city, town and village government, sometimes known as the "Des Moines" plan. The committee will include Senator McKenzie of Elizabeth and Senator Dailey of Peoria. The three other members are to be named later. Ten Illinois cities, including among them four of the largest six cities in the State outside of Chicago, and more than half of the cities with over 20,000 inhabitants, have appealed to the Legislature to pass an act making possible the commission form of government, which has proved successful in Galveston, Des Moines and many other cities. They do not ask to have this form of government imposed on them, but only to have a law passed which will enable the residents of any city to adopt it by popular vote if they so desire.

REFUSE COLLECTION AND DISPOSAL

Evansville Has White Wings

Evansville, Ind.—Evansville has inaugurated the patrol system of street cleaning. The force at present consists of two "white wings," but their number will be increased as their efficiency is demonstrated.

Tag Day Funds for Clean-up Day

Leavenworth, Kan.—The officers of the Civic League have decided on May 2 as a "clean-up" day. Prior to the "clean-up" day there will be a "tag day," when pretty girls will tag citizens in order to raise a small fund to be used by the Civic League in the clean-up work.

Inspection of Street Cleaning Department

New Orleans, La.—Commissioner Smith, of the Department of Public Works, recently inspected the street cleaning force of his department, after which a parade was formed and marched through the business section. On the ground and under inspection the Commissioner had the following turn out: Ninety-one head of stock, five sanitary flushers, ten street sprinklers, ten street sweepers, sixteen dump wagons, two egg wagons, two floats, one paper wagon, one pick-up machine and one squeegee machine. In the line-up there were also two sprinklers and two sweepers and three head of stock operated by the St. Charles Avenue Improvement Association, under the direction of the Public Works Department. The judges of the awards were Philip Werlein, Sam Weis and Councilman P. J. Greenan, and Mr. Werlein and Mr. Weis complimented the Commissioner heartily for the vast improvement noted in the general appearance and the increase in apparatus.

Owners of Lots Have Ten Days to Clean Up

Tacoma, Wash.—Commissioner of Public Works H. J. McGregor has sent out notices to the property owners who have allowed their property to become filled with unsightly trash piles instructing them to clean their premises at once. If the orders are not complied with within ten days the Commissioner will ask authority from the City Council to go ahead and clean the lots with city forces, charging the cost up to the property. This money will be collected the same as taxes, acting as a first lien.

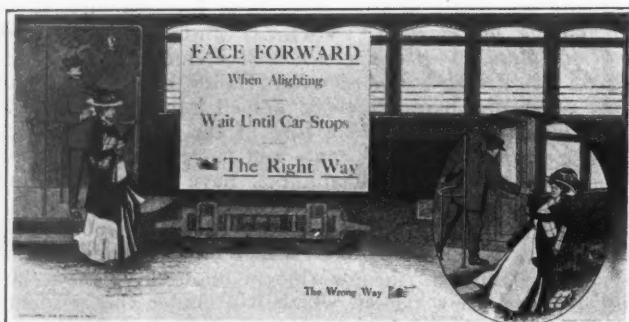
Club Women as "White Wings"

Washington, D. C.—Washington club women as "white wings," bent upon making the national capital a spotless town, will make April 15 known in municipal history as "cleaning day." The Twentieth Century Club, whose membership embraces many women of Washington's best known families, at a meeting attended by several hundred members, adopted resolutions which were presented decrying the littered condition of some of the streets and pledging the cooperation of themselves, their friends and their neighbors in picking up the papers on streets and parkings in the vicinity of their homes "on Thursday, April 15, at 9 o'clock in the morning." Each member of the club is to head a sub-committee of women on her home block.

RAPID TRANSIT

How to Get Off a Car

Chicago, Ill.—Colored posters have been placed in conspicuous positions in the street cars of Chicago, illustrating the right way and the wrong way of getting off a street car.



POSTER PLACED IN STREET CARS OF CHICAGO, ILL.

City Will Buy Horse Car Line

Hamilton, O.—The city of Middletown will become the first municipality in Ohio to own and operate her own electric street railway system. The Business Men's Club recommended the purchase of the horse car line owned by the C., H. and D. Railroad, and raised \$6,000 by subscription to aid the city in the purchase and in converting it into an electric line. The C., H. and D. has indicated its willingness to sell.

Auto Cars for Horse Lines

New York, N. Y.—Frederick W. Whitridge, receiver of the Third Avenue and Union Companies, has announced that he will experiment with self-propelled surface cars in the hope that he will be able to do away with the horse cars on the Dry Dock, East Broadway and Battery route and the St. Nicholas avenue line. Mr. Whitridge is having built two cars, one with an electric storage battery and the other with a gasoline motor. He expects that both of these cars will be delivered before April 30, and they will at once be put into passenger service. Mr. Whitridge said that he was confident that both types would prove successful and that he wished to find out which was the more economical.

New Rapid Transit Bill for New York

New York, N. Y.—Assemblyman Beverly R. Robinson and Senator Travis have introduced a bill amending the rapid transit act so as to provide several methods of constructing rapid transit lines in New York. One method proposed is the amendment of the constitution so as to allow the exemption from the city debt limit of self-sustaining rapid transit bonds. Another method is the construction of rapid transit lines in the outlying boroughs whereby a portion at least of the cost can be assessed on the property benefited. The third method is the construction of roads by private capital, in which case the property will be taxed. In this instance the city will retain an option to purchase the road at any time after ten years from its completion.

Franchise Fight Coming in Toledo

Toledo, O.—The Council soon to be elected will have a street railway franchise question to solve and members will be elected with reference to their positions on that question. Although a legislative enactment requires a referendum, details of the ordinance will be fixed by Council. President Albion E. Lang, of the reorganized traction company, has already begun his campaign. His plea is that the existing franchise is retarding the industrial growth of Toledo and that terms favorable to the company should be granted. It is understood that the Schoepf syndicate, which now has lines entering the city, may bid for the franchise.

MISCELLANEOUS

Chicago Ordains Tree Regulations

Chicago, Ill.—An ordinance has been passed giving the Special Park Commission full power and authority over all trees, plants and shrubs along the public highways and authorizing them to appoint a City Forester. It will be the Forester's duty to regulate and encourage the planting of trees. He will advise owners of lots regarding the kind of trees best adapted for their property. He will take such measures as are necessary to exterminate insect pests and fungi which injure trees. Owners will be required to trim their trees so as not to obstruct the street lights and to remove dead branches. No person will be allowed to hitch a horse to a tree. Gas companies must repair leaks in pipes within forty feet of a tree when required by the Forester. No one will be allowed to construct a sidewalk without leaving an open space around each tree.

Competition in Outdoor Art

Peru, Ind.—The committee having charge of arrangements to beautify Peru has received 2,400 packages of flower seed, 400 of them from the Government, and will soon begin distributing them among the people who desire to compete for the Commercial Club prizes, which are to be awarded in August. The Commercial Club has permitted the residents of South Peru to enter the contest. The women of this city and that suburb are quite active in preparing for beautifying Peru.

HOUSES MUST BE NUMBERED

City and Federal Authorities of Nashville Cooperate to Enforce Law—Mail Delivery Stopped—Arrests by City

Nashville, Tenn.—Postmaster A. W. Wills is in receipt of a communication from Mayor James S. Brown, informing him that the city ordinances impose a fine of from \$5 to \$20 upon any citizen who fails to provide a proper house number under the existing municipal laws. In the communication it is further recited that every effort will be made to enforce the ordinance on the subject, and that the officers of the Police Department will continue to make arrests. The proper numbering of the houses of the city is causing both the city and Federal authorities much concern. Under the city ordinances passed March 3, 1896, each citizen is required to place the proper number upon his residence or place of business. Under the postal regulations Postmaster Wills has received an order from the Postoffice Department to stop delivering mail to any person whose house does not bear the proper number. The city engineering forces, after much labor, have given each house a proper number, and any citizen can secure this proper number upon application.

Chickens May Run at Large

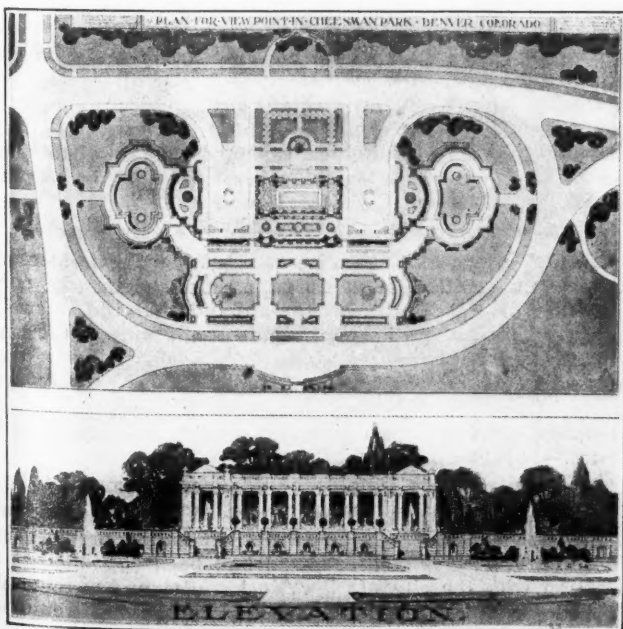
Moorefield, W. Va.—Chickens may continue to run at large in this city. An election was held a few days ago to determine whether they should be permitted to wander off the premises of their owners, and the chickens won by a majority of six votes.

Adopting Improvement Suggestions

San José, Cal.—A special meeting of the Mayor and Common Council was recently held to receive from the Outdoor Art League the report prepared at their expense by Charles Mulford Robinson on the improving of the city. The report, a voluminous document, illustrated with photographs and maps, was read in full. The Council unanimously adopted the report and referred it to the Streets, Lands and Squares Committee, with the recommendation that the suggestions therein made be carried out. A vote of thanks was tendered to the League.

Denver's Big Civic Center

Denver, Col.—The Park Board has determined on the expenditure of approximately \$2,750,000 to complete what is known as the MacMonnies Civic Center. This plan, which was laid out by Frederick MacMonnies, sculptor, provides for the parking of a section of the city in the neighborhood of the Capitol grounds, and includes the erection of a fountain, shown in the illustration, and a building to be used as a museum. The proposal will be advertised for a period of ninety days, at the end of which time, unless protest is lodged by 25 per cent of the citizens, the plan will be put in operation.



CIVIC CENTER AND PARK FOR DENVER, COL.

Middle Span of Manhattan Bridge Closed

New York, N. Y.—A little before noon, April 7, the first piece of steel closing the gap in the Manhattan bridge lower deck between the Brooklyn and Manhattan towers sank slowly into place over the middle of the East River, and as it carried an American flag it caught the eye of captains and pilots of river craft and there went up from below the voices of many whistles. The first piece was followed by seven others and in a few hours the lower chords of the newest bridge were all in place. These eight sixteen-ton sections of the lower chord were swung into position, four from the Brooklyn side and four from the Manhattan side of the riverspan, as the workmen on each side had carried out their construction on equal terms.

Will Operate Ferry During Bridge Construction

Ottawa, Ill.—An ordinance has been passed providing for the construction, maintenance and operation of a ferry across the Illinois River during the construction of the bridge now being erected across said river. A provision is inserted in the ordinance whereby, if the Council so desires, a charge can be made for the transportation of passengers and vehicles. A maximum charge is provided for the operation of a ferry to the amount of \$4,500, which is considered enough, and the bond of the contractor was placed at \$25,000.

Salt Lake's New Liquor Ordinance

Salt Lake City, Utah.—Council has passed a new liquor ordinance, the principal features of which are:

- One bar under one license.
- No gambling of any kind.
- Licenses issued only to proprietors.
- Licenses to be approved by the Chief of Police after inspection of premises.
- Revocation by easy road.
- Absolute bar against minors, women, free lunch, sleeping.
- Strict Sunday closing, with all screens removed; places open to inspection.
- Breweries or others may take out not more than three licenses.
- Weekday closing from 12 o'clock midnight till 6 o'clock next morning.
- Druggists shall not mix liquor with soda water, mineral water or soft drinks.
- Penalty for doctors who issue fraudulent prescriptions.
- Defines sureties and bonds in connection with licenses.
- Does not bar tables or chairs from saloons, nor open booths from restaurants, hotels, etc.
- Prohibits communication by means of wires or tubes.
- Fixed rates of license, the main feature of which is an increase of the retail dealer's license from \$1,200 to \$1,500.

Work of Newark's Public Library

Newark, N. J.—Newark's Free Public Library, John Cotton Dana, librarian, has recently established a technical and scientific department. A room 30 by 96 feet is assigned to the department. It contains a file of about three hundred scientific, technical and trade journals; a collection of 3,000 manufacturers' catalogues; the patent reports of the United States, Great Britain and Canada, and about 8,000 books classed in the 600 and 700 divisions of the Dewey decimal system. The room is well lighted, contains comfortable chairs and tables for the readers, who are at liberty to consult any document by going to the shelves without formal application. The technical department is in charge of W. H. Morningstern.

Curbstone Market Established

Williamsport, Pa.—An ordinance has been approved by Mayor Charles D. Wolfe authorizing and regulating a curbstone market on certain streets on Wednesday and Saturday forenoons. Definite nine-foot spaces will be set apart for each vendor and a charge of \$3 per month will be made. A further charge of 25 or 50 cents per day will be made as a license fee. Not more than three feet of the sidewalk space may be used for displaying goods. A fine of \$10 will be imposed on any vendor exposing for sale unwholesome food. A market clerk to be appointed will keep on a truck correct scales and measures by which others will be tested. A fine will be imposed on any person purchasing provisions for the purpose of resale.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Public Improvement—Sidewalk Defined

City of Chicago vs. Bassett et al.—Under Hurd's Revised Statutes, 1908, which dispenses with a public hearing in proceedings for constructing sidewalks, a public hearing is not necessary on a petition for the construction of a cinder walk with a wooden curb and a berm constructed on each side of the walk, the latter to be flush with the surface and six inches in width at the top, as the improvement is nothing but a sidewalk, although it provides for a curb and a berm.—Supreme Court of Illinois.

Sewer—Revocable License—Assessment

City of Chicago vs. Green.—The right of a city to construct and maintain a sewer over land imposes upon the land a perpetual easement, which is a freehold estate acquirable only by deed, prescription, or condemnation, and a permission given a city by resolution of the commissioners of a canal to lay a sewer "across the right of way and under the bottom of the * * * canal by means of a siphon be and the same is hereby granted" is insufficient to give the city such an estate in the land, it not being a conveyance, but only a license revocable at will, and hence such permit was not a sufficient basis for levying a special assessment for the sewer; Local Improvement Act, providing that no such assessment shall be levied until the land necessary for the special improvement shall be acquired.—Supreme Court of Illinois.

Annexation of Territory—Validity

Ogle et al. vs City of Belleville et al.—The question of the legality of proceedings by a city to annex territory under a valid law authorizing annexation of territory cannot be inquired into in a proceeding by property owners and citizens against the city and members of the City Council to compel defendants to restore money paid for the expenses of an election to annex the territory, on the ground that the proceedings were illegal because the petition for annexation did not contain a majority of the names of property owners in the territory proposed to be annexed.—Supreme Court of Illinois.

Annexation of Village

Village of East Springfield vs. City of Springfield.—Equity has jurisdiction of a suit by a village to enjoin the exercise of a right claimed by a city to govern and control it and its property, based on the ground that an election to annex the village is null and void. Act April 25, 1889, providing for the annexation of cities and villages by a petition and election, is a special act applying to a particular class of elections, and hence was not repealed by the general ballot law of 1891, which did not refer to the annexation act further than to provide that all acts and parts of acts inconsistent therewith were thereby repealed, and an election should be conducted, and the ballots prepared, in accordance with the annexation act, and not in accordance with section 16 of the ballot law.—Supreme Court of Illinois.

Idaho Laws Regarding Bond Issues

Boise City Nat. Bank vs. Boise City.—An act providing for the issuance of bonds for improvement of streets and laying of sewers in incorporated cities, towns, and villages, and for the payment of the cost of such improvements, etc., approved February 24, 1905, is a general law applicable to cities, towns, and villages that have been incorporated under the general law of the State, and is not applicable to cities incorporated under special charter.—Supreme Court of Idaho.

Street Accident—Unreasonable Provision Regarding Notice

Wurster vs. City of Seattle.—A provision of a city charter requiring the notice of claim for injuries from a defective street to state claimant's residence for a year prior to the accident is unreasonable, and will not be literally enforced.—Supreme Court of Washington.

Removal of Trees—Authority of Village

West et al. vs. Village of White Bear et al.—Respondents were the owners of certain lots in the village of White Bear, which, according to the plat, abutted on Lake avenue, which had never been improved or opened as a public street. Across the front of respondents' lots, and overlapping Lake avenue to some extent, ran a road about 22 feet wide, which had become a public highway by user. Acting upon the belief that they possessed authority to widen the road to a distance of 2 rods on either side of the center line thereof, the village officers proceeded to cut down the trees standing between the easterly line of the traveled road and the center of Lake avenue as platted. Held, the trial court was justified in finding that the destruction of the trees was not warranted, for the reason that the widening of the road at that point would meet no useful purpose, inasmuch as no authority existed for making the improvement continuous along the line of the road.—Supreme Court of Minnesota.

Council Meetings—Authority of Mayor

Glazier vs. City of Newport.—Under Kentucky Statutes 1903, providing that the Board of Aldermen and the Board of Councilmen shall meet at least once a month and shall not adjourn for a longer time, but may adjourn from day to day, and that, when both Boards are called in session, one shall not adjourn without the concurrence of the other for a longer time than 24 hours, etc., and section 3110, authorizing the Mayor to convene at any time the General Council, composed of the two Boards, the Mayor cannot convene the Board of Aldermen alone to enact general legislation begun in the Board of Councilmen.—Court of Appeals of Kentucky.

Street Assessment—Power to Abate

City of Chicago vs. Hurford et al.—There is no authority for the abatement of a special assessment against property which has been regularly confirmed. Where vouchers were issued by a city to contractors in connection with a local improvement, upon receipt by the city of portions of the assessment the interest ceased upon the vouchers to the payment of which the sums so received were legally applicable.—Supreme Court of Illinois.

Sidewalk Improvements—Benefits

City of Chicago vs. Marsh et al.—Property adjacent to a sidewalk improvement is benefited if there is an increase in its value for any purpose for which it is adapted.—Supreme Court of Illinois.

Special Assessments—Depth of Lots—Evidence

City of East St. Louis vs. Illinois Cent. R. Co.—Where, in a special assessment proceeding, it appeared that all the property in the proposed improvement was owned by two persons, and that most of the property of the person objecting to the assessment was only 30 feet in depth, while the depth of the property of the other was not shown, comparison of the benefits as to the 1 foot of frontage on one side of the street with the benefit to 1 foot of frontage on the other might be detrimental to the objecting person, and evidence of what would be the fair and just proportion that the property of the objector should bear to a like number of feet of frontage on the other side of the street was erroneous.—Supreme Court of Illinois.

Assessment—Objection—Absence of Evidence

City of Chicago vs. Wilshire et al.—Where one objecting to the confirmation of a special assessment for the construction of a sidewalk, on the ground that the sidewalk was in existence and in good repair at the time of the passage of the improvement ordinance, failed to show that he had exercised any degree of diligence to procure evidence of the fact relied on, the court properly refused to postpone the hearing to give him time to procure the evidence.—Supreme Court of Illinois.

Civil Service Employee—Summary Removal

Sutcliffe vs. City of New York.—Where plaintiff had passed the necessary competitive examination provided by the civil service regulations, and had been appointed to a position with the city of New York, on summary removal, he can recover the amount of salary lost by such removal.—New York Supreme Court.

NEWS OF THE SOCIETIES

League of American Municipalities.—Secretary John MacVicar, Des Moines, Ia., announces that the programme for the thirteenth annual convention, to be held at Montreal, Canada, August 25-27, is in the course of preparation. The folder announcing the date of the convention states that the object of the society is to promote efficiency in city government. To accomplish this purpose it maintains a bureau of information, whose service is available to the heads of departments of all cities holding membership.

American Society of Mechanical Engineers.—The programme for the spring meeting, to be held at Washington, D. C., May 4, promises one of the most interesting meetings that has been held by the society for some time, and represents diligent work on the part of the local committee, headed by Walter A. Macfarland. From the following outline of the events arranged for, it is evident that those who attend it will enjoy some unusual privileges:

Tuesday, May 4, 8:15 p. m.

Informal reception at the New Willard Hotel.

Address of welcome by Hon. Henry B. F. Macfarland, President of the Board of District Commissioners.

Response by Jesse M. Smith, President of the Society.

Wednesday, May 5.

Professional session at 9:15 a. m.

Sight-seeing automobile trips about the city at 10 a. m. for the ladies.

Reception of members and their guests by the President of the United States in the East Room of the White House at 2:30 p. m.

Trips to nearby points of interest at 4 p. m.

Illustrated lecture by F. H. Newell, Director of Reclamation Service, on "Home Making in the Arid Regions," at 8:15 p. m.

Thursday, May 6.

Short professional session at 9:15 a. m.

Trips for the ladies to points of interest in and about the city at 9:15 a. m.

Special exhibition drill by troops of Fort Myer at 2 p. m.

Social reunion. Address by Rear-Admiral Melville on "The Engineer in the Navy," at 8:15, to be followed by presentation to the National Gallery of a portrait of Rear-Admiral Melville, with acceptance by Dr. C. D. Wolcott, Secretary of the Smithsonian Institution, representing the nation.

Friday, May 7.

Professional session at 9:15 p. m.

The illustrated lecture by F. H. Newell and the address by Rear Admiral Melville, past president of the society, are both on subjects with which their speakers are peculiarly familiar. The prospect of hearing these and witnessing two exhibition drills of the United States troops, with a possibility of an ascension of a dirigible balloon and an aeroplane, the reception by President Taft, and the fact that Congress will be in session at that time, combine to make it extremely probable that there will be an unusually large attendance of members and guests of the society.

Federated City Clubs of Omaha.—Thirty-two clubs were represented April 1 at the regular monthly meeting of the Federated Improvement Clubs of Douglas County, held at Twenty-fourth and Leavenworth streets. A resolution was adopted condemning the billboard nuisance, and a committee consisting of S. Arion Lewis, Dr. E. Holovtchiner, M. O. Cunningham, George J. Klefner and Fred Howe, was appointed to appear before the City Council with the recommendation that the city ordinances be so amended that the billboards will be entirely eradicated in certain sections of the city or to require them to be placed back from the street line a distance double the height of the billboard.

Engineers' Club of Central Pennsylvania.—A lecture on "Recent Developments in Water Purification" was delivered before the club April 7 by George A. Johnson, of New York. Mr. Johnson has lived in Japan and has traveled extensively in China, India and other foreign countries. During his travels he has collected a rare series of photographs, which were exhibited during the evening by means of lantern slides. The speaker told in both a general and detailed way what cities of the world have been doing to purify drinking water and the cost of construction and operation of the improved methods.

American Institute of Electrical Engineers.—A special meeting of the American Institute of Electrical Engineers will be held in the Engineers' Building, 33 West Thirty-ninth street, New York City, April 16, at 8 p. m., under the auspices of the Educational Committee. The following paper will be read: "Fundamental Principles of Industrial Education," by Herman Schneider, dean of the College of Engineering of the University of Cincinnati. In obtaining this paper it has been the aim of the Educational Committee to lay before the members of the Institute the problems of industrial and technical education. Last year the committee devoted its attention to the problem of technical education. This year it has been deemed wise to present some phases of more elementary industrial education. Among those who have already contributed discussion on the paper are the following: Charles S. Howe, president Case School of Applied Science, Cleveland, O.; V. Karapetoff, professor of experimental electrical engineering, Cornell University; Alexander C. Humphreys, president Stevens Institute of Technology, Hoboken, N. J.; George M. Basford, American Locomotive Company, New York; Ralph W. Pope, secretary American Institute of Electrical Engineers, New York; Franklin Phillips, Hewes & Phillips, engine builders, Newark, N. J.

National Irrigation Congress.—Apostles of irrigation, deep waterways, drainage, good roads and conservation of resources and recruits from various parts of this continent, England, Germany, France, Hawaii, the Philippine Islands, the Latin republics and China and Japan, representatives of foreign nations and Colonial governments, officials of the Federal reclamation, forestry and agricultural departments, Governors and members of State and Territorial Legislatures, railroad and bank presidents, and members of agricultural, horticultural, commercial and fraternal organizations will gather in Spokane, Wash., August 9 to 14, where the National Irrigation Congress will have its seventeenth session. "To save the forests, store the floods, reclaim the deserts and make homes on the land" are the four primary objects outlined in the official call, issued by George E. Barstow, of Barstow, Tex., president; B. A. Fowler, of Phoenix, Ariz., secretary of the national organization, and R. Insinger, chairman, and Arthur Hooker, secretary of the local board of control. The regular programme will consist of addresses by officials of the reclamation, forestry and agricultural departments of the United States, statesmen and scientists, railroad and financial men, promoters of the Carey act reclamation projects and officials of private irrigation enterprises. The Federal Department of Agriculture has taken charge of a 20-acre tract of land in the Spokane Valley, where there will

be demonstrations of the latest approved methods of supplying the soil with moisture by artificial means by irrigation experts.

New England Society of Orange.—A lecture on "Sewage and Sewerage" was delivered at the regular meeting, April 10, of the New England Society of Orange by President George A. Soper, of the New York Metropolitan Sewerage Commission. The lecture was illustrated with lantern slides and was of unusual interest as dealing with the question of the advisability of emptying sewage from the Passaic Valley into the Harbor of New York.

City Club of Memphis, Tenn.—At a meeting March 27 Finley W. Faxon delivered an address urging that the question of sewerage was the most important one before the city. He said that the city was exceptionally favored by its location for the economical extension of its sewerage system.

Municipal Art Society of Baltimore, Md.—A committee of the Municipal Art Society is endeavoring to raise a fund of \$5,000 with which to prosecute vigorously the work of decorating the public schools of Baltimore. The committee consists of Mrs. W. W. Spence, Jr., chairman; Mrs. Josias Pennington, Mrs. Miles White, Mrs. William M. Ellicott and Mrs. James H. Van Sickle.

National Highways Prohibitive Society.—Organized for the purpose of preventing the improper or unreasonable use of public highways by owners of vehicles, including automobiles, to secure construction of good roads and to endeavor to bring about reasonable and uniform rules and regulations for the use of highways throughout the United States, the National Highways Prohibitive Society of New York was incorporated at Albany, N. Y., March 30.

Calendar of Meetings

April 14-15.

American Society of Engineering Contractors.—First meeting, United Engineering Building, 29 West 39th street, New York, N. Y.

April 21.

Western Society of Engineers.—Regular meeting, 1735 Monadnock Block, Chicago, Ill.—J. H. Warder, Secretary.

April 21.

American Society of Civil Engineers.—Regular meeting at Society House, 120 West Fifty-seventh street, New York.—Charles Warren Hunt, Secretary.

May 11-14.

Playground Association of America.—Third annual Congress, Pittsburg, Pa.—Henry S. Curtis, 705 Ouray Building, Washington, D. C.

May 16-19.

City Marshals and Chiefs of Police of Texas.—Annual convention, Galveston.—Chief J. H. Maddox, Fort Worth, Chairman, Executive Committee.

May 20-22.

Southwestern Electrical and Gas Association.—Annual meeting, Dallas, Tex.—R. B. Stichter, President, Dallas, Tex.

June 1-4.

National Electric Light Association.—Thirty-second convention, Atlantic City, N. J.—John F. Gilchrist, Engineering Societies Building, 29 West 39th street, New York, N. Y., Secretary.

June 8-12.

American Water Works Association.—Twenty-ninth annual convention, Milwaukee, Wis.—J. M. Diven, Secretary, 14 George St., Charleston, S. C.

June 15-19.

International Association of Police Chiefs.—Annual convention, Buffalo, N. Y.—Maj. Richard Sylvester, President, Washington, D. C.

June 28.

American Institute of Electrical Engineers.—Annual convention, Hotel Frontenac, Thousand Islands, Frontenac, N. Y.—R. W. Pope, Secretary, 33 West 39th street, New York, N. Y.

July 6-9.

American Society of Civil Engineers.—Annual convention, Mount Washington Hotel, Bretton Woods, N. H.—Charles Warren Hunt, Secretary, 220 West 57th street, New York, N. Y.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Illinois	Chicago	Apr. 15, 11 a.m.	Vit. brick, asphalt, limestone paving, etc., 17 contracts.	C. A. V. Standish, Sec'y Bd. Loc. Imp.
Maryland	Towson	Apr. 15	Grading and macadamizing 1 1-2 miles Black Rock road.	E. Stanton Bosley, Sec'y Hwy. Comrs.
Ontario	St. Catharines	Apr. 15, noon	Vit. brick, asphalt, block, bitulithic paving, etc., various streets.	D. Binzie, City Engineer.
New York	Buffalo	Apr. 15, 11 a.m.	Paving 3 streets.	F. G. Ward, Com'r Pub. Wks.
Minnesota	St. Paul	Apr. 15, 2 p.m.	Curbing, filling and leveling 3 streets.	John S. Grode, Pres. Bd. Pub. Wks.
New York	New York	Apr. 15, 2 p.m.	Repairs to asphalt pavement on Harlem bridges during 1909.	J. W. Stevenson, Com'r of Bridges.
New York	New York	Apr. 15, 3 p.m.	Repairing asphalt paving in parks of Manhattan; also furn.	Henry Smith, Pres. Park Board.
Wisconsin	La Crosse	Apr. 15, 2 p.m.	Roa Hook or other gravel and timber for parks.	H. J. Beckwith, Chm. Bd. Pub. Wks.
New York	Plattsburg	Apr. 16, 8 p.m.	Furn. material and laying 18,031 sq. yds. macadam; 10,713 lin.	E. C. Baker, City Clerk.
Minnesota	Albert Lea	Apr. 15	ft. cement curb and gutter; 2,640 sq. ft. concrete driveways	Wm. Barneck, City Engineer.
New York	Brooklyn	Apr. 15, 3 p.m.	Constructing 2,000 sq. yds. concrete sidewalks.	Henry Smith, Pres. Park Board.
Ohio	Byesville	Apr. 15, noon	Brick or creosoted block paving, 9,236 sq. yds.	Elmer E. Green, Village Clerk.
Iowa	Marengo	Apr. 15	Furn. dust preventive or road oil in Prospect Park.	City Council.
Ohio	Cincinnati	Apr. 16, noon	Vit. brick or asphalt paving, 15,893 sq. yds., grading, curbing,	Fred. Dreihls, County Clerk.
Wisconsin	Tomah	Apr. 16, 1 p.m.	draining several streets.	D. J. Aller, City Clerk.
Utah	Salt Lake City	Apr. 16	Paving ten city blocks with brick.	L. C. Kelsey, City Engineer.
Oklahoma	Enid	Apr. 16	Repairing Springfield pike and Zion road; bond, \$1,000 each.	E. R. Lee, City Clerk.
Minnesota	Garland	Apr. 17, 1 p.m.	Constructing brick pavements.	Peter Palmerson, Town Clerk.
New Jersey	Asbury Park	Apr. 17	Bldg. cement sidewalks in extension 98, Section 2.	Niart Rogers, C.E., Bd. Freeholders.
Wisconsin	La Crosse	Apr. 17, 2 p.m.	Vit. block on 6-in. concrete, grade, curb, etc., Randolph ave.	
Wisconsin	Racine	Apr. 17, 10 a.m.	Grading 13 miles of road for town.	
Ohio	Cleveland	Apr. 17, 11 a.m.	Bldg. 1 1-2 miles gravel road on Asbury ave., two twps.	
Ohio	Youngstown	Apr. 17, 1:30 p.m.	Brick paving, 6,643 sq. yds.; concrete driveways, 300 sq. ft. on	
Idaho	Wallace	Apr. 19	6-in. concrete; grading, 3,403 cu. yds.; cement curb and	
Missouri	Chillicothe	Apr. 19, noon	gutter, 3,633 lin. ft.; concrete headers, 170 lin. ft.	
Ohio	Chathfield	Apr. 19, noon	Paving Freeman Court from Milwaukee ave. to Chestnut st.	
Illinois	Joliet	Apr. 19, 10 a.m.	Grading, draining and paving Center road No. 3.	
Iowa	Burlington	Apr. 19, 4 p.m.	Turnpiking section of Four-Mile Run road.	
Ohio	Wilmington	Apr. 19	Furn. material and laying 22,000 sq. yds. asphalt; \$60,271.	
New York	Fulton	Apr. 19, 8 p.m.	Paving, curbing and improving Jackson st.; bond, \$5,000.	
Alabama	Montgomery	Apr. 19	Grading, macadamizing, piking, screening 3 sections of roads.	
Wisconsin	Fond du Lac	Apr. 19, 3 p.m.	Macadamizing Whittiers ave.	
Texas	Galveston	Apr. 19	Paving, brick and macadam, on sundry streets.	
Pennsylvania	Pittsburg	Apr. 19, 10 a.m.	Road Imp. No. 122; grading and macadamizing.	
Ohio	Norwood	Apr. 19, noon	Trap rock macadam paving, 32,000 sq. yds.; vit. brick, 7,750 sq.	
Kentucky	Concord	Apr. 19	yds.; cement curb, 18,000 ft.; 10 to 20-in. sewer, 4,800 ft.	
Oklahoma	Oklahoma City	Apr. 19, 5 p.m.	Paving 7 streets, asphalt, brick, etc.; curbing and grading.	
New York	Saranac Lake	Apr. 20, 1 p.m.	Grading, paving, curb and gutter, etc., N. Park ave.	
New York	Gloversville	Apr. 20, 5 p.m.	Improving Avenue S, County road.	
Michigan	Manistee	Apr. 20, 2 p.m.	Brick, asphalt and block stone paving, curbing, grading, etc.	
Massachusetts	Cambridge	Apr. 20, noon	Grading, curbing, paving, etc., sundry sts., 4 jobs.	
West Virginia	Wheeling	Apr. 20, 2 p.m.	Constructing 4 miles of turnpike for Conc. and Man. Tpk. Co.	
Ohio	Mt. Healthy	Apr. 20, noon	Asphalt paving on 5-in. concrete, curb, grading, etc., several sts.	
Saskatchewan	Saskatoon	Apr. 20, 5 p.m.	also laying delinquent sidewalks several sts.	
New York	New Brighton, S.I.	Apr. 20	Vit. brick on concrete, 7,000 sq. yds.; macadam, 22,500 sq. yds.	
West Virginia	Marlinton	Apr. 20	concrete curbing, 10,000 ft.; gutter, 13,500 ft.; grading, etc.	
Virginia	Roanoke	Apr. 21, noon	Brick, block or bitulithic paving, 21,000 sq. yds.; curb, 10,500 ft.	
Iowa	Des Moines	Apr. 21, 10 a.m.	Constructing 1,716 lin. ft. combined curb and gutter on River st.	
Ohio	Cleveland	Apr. 21, 11 a.m.	Furn. tarvia, asphalt, oil, asphalt or any similar com-	
New York	Brooklyn	Apr. 21, 11 a.m.	position for preserving surface of highways.	
Ohio	Elyria	Apr. 22	Paving one mile of River Road.	
Ohio	Cincinnati	Apr. 23, noon	Constructing cement sidewalks on sundry streets.	
New York	Harrison	Apr. 23, 2 p.m.	Furn. stone crusher, 10 to 20-ton per hr. capacity; elevator com-	
Utah	Salt Lake City	Apr. 23	plete; set screens and bins; 10-ton road roller, etc.	
Ohio	Cleveland	Apr. 24, 11 a.m.	Cement sidewalks and reflagging Castleton ave., etc.	
Ohio	Ashland	Apr. 26, 2 p.m.	Bldg. road 14 ft. wide, 10 ft. solid rock bed to be dounded up.	
Massachusetts	Boston	Apr. 26, 2:30 p.m.	Bldg. granolithic sidewalks 5 sts.; also curb and gutter.	
Ohio	St. Bernard	Apr. 27, noon	Paving 2 streets.	
Wisconsin	Madison	Apr. 27, 2 p.m.	Grading, draining & improving Ind. & Parnia town line road No. 2	
New Jersey	Hoboken	Apr. 28, 4 p.m.	Paving and repaving with asphalt on concrete, also resetting	
Indiana	Anderson	Apr. 28, 10 a.m.	brick gutters, laying sidewalks, grading, draining, etc.	
New Jersey	Hackettstown	Apr. 29, 2 p.m.	Paving East ave.	
Ohio	Cincinnati	Apr. 30, noon	Improving 1,500 ft. of five roads, Sycamore twp., Spec. No. 870-74	
Hawaii	Lihue	May 1	Brick paving, 19,200 sq. yds.; curbing, storm drains, etc.	
Wisconsin	Racine	May 1, 10 a.m.	Halstead ave.; also macadamizing, etc., 4 miles of sts.	
South Dakota	Aberdeen	May 3	Bldg. sidewalks in Extension No. 142 and No. 98, Section 2.	
Indiana	Hartford City	May 3, 2 p.m.	Grading, draining and improving Ridge road No. 2.	
Kansas	Atchison	May 3	Macadamizing and piking 5 miles of roads.	
Ohio	Cadiz	May 5, noon	Surfacing and grading Sec. 1, Boston embankment.	
Ohio	Columbus	May 5, noon	Sidewalks on Spring Grove avenue; Geo. Schroeder, Vil. Clk.	
Pennsylvania	Philadelphia	May 11	Furn. material and macadamizing several sts. and alleys.	
Illinois	Chicago	Apr. 15	Excav. cement curb and sidewalks, sewers, etc., Elysian sq. pk.	
New York	North Hempstead	Apr. 15, 2 p.m.	Constructing 9 gravel roads, total length, 76,464 ft.	
Connecticut	New Haven	Apr. 15, noon	Macadamizing public road, 45,341 ft. long, 2 twps.	
North Dakota	Goodrich	Apr. 15, noon	Improving Polk Run road; spec. 841; \$1,000 check.	
Indiana	Shirley	Apr. 15	Furn. traction engine and macadam traction cars, f.o.b. steamer.	
Oklahoma	Lehigh	Apr. 15	Paving sundry streets.	
Texas	Plainview	Apr. 15, 3 p.m.	Constructing sidewalks on various streets.	
Ontario	Fort Francis	Apr. 15, 8 p.m.	Constructing 5,552 ft. macadam road in Washington twp.	
New York	New York	Apr. 16, 11 a.m.	Brick paving, 1,840 sq. yds.; cement curbing, 1,100 lin. ft.	
New York	Warwick	Apr. 16, 2 p.m.	Brick paving, 8,048 sq. yds.; Riggs & Sherman Co., Toledo, Engrs.	
Wisconsin	Platteville	Apr. 16, 7:30 p.m.	Macadamizing, etc., National road.	
			Abolishing grade crossings in city.	
WATER SUPPLY				
Illinois	Chicago	Apr. 15	Furn. 48-in. and two 36-in. horizontal hub end hydraulic gate	
New York	North Hempstead	Apr. 15, 2 p.m.	valves with 6-in. by-passes.	
Connecticut	New Haven	Apr. 15, noon	Furnishing water supply to New Hyde Park Water Dist., for	
North Dakota	Goodrich	Apr. 15, noon	fire, sanitary and other public purposes; 15 hydrants.	
Indiana	Shirley	Apr. 15	Bldg. 8,400 ft. 6 1-2 ft. rock tunnel for water supply.	
Oklahoma	Lehigh	Apr. 15	Sinking a well.	
Texas	Plainview	Apr. 15, 3 p.m.	Purch. of material and machinery for extending W.W., \$42,500.	
			Constructing \$25,000 water works system.	
			Furn. material and constructing water works and sewer system,	
			including 4,000 ft. 6-in. and 2,350 ft. 4-in. c. i. pipe, 3 tons	
			specials, six 6-in. and four 4-in. valves, 10 fire hydrants, steel	
			tank, concrete storage tank, 60-gal., also 500-gal. pump, boiler,	
			pump house, etc.; E. L. Dalton, Dallas, Engr.	
			Furn. material and bldg. water and sewerage works.	
			Bldg. Sections 17 and 18 of Catskill Aqueduct.	
			Material and labor for laying 2 miles c. i. water pipe, inc. 6,400	
			ft. 8-in. and 4,300 ft. 6-in. pipe or 223 tons; also 4 1-2 tons	
			specials; 21 valves and valve-boxes, four 8-in.; 13 hydrants.	
			Constructing deep well pumping system.	
				John J. Hanberg, Comr. Pub. Wks.
				Monroe S. Wood, Town Clerk.
				Eli Whitney, Pres. Water Co.
				W. J. Burt, Village Clerk.
				O'Neil Engineering Co., Dallas, Tex.
				R. D. Burnett, Pres. Bd. Wks.
				Jas. R. Delay, Mayor.
				W. H. Elliot, Town Clerk.
				John A. Bensei, Pres. Bd. Wtr. Sup.
				Henry Pelton, Engr. Water Bd.
				W. G. Kirchoffer, C.E., Madison.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
WATER SUPPLY—Continued				
New York	New York	Apr. 15	Furn. double-nozzle standard N. Y. hydrants.	John H. O'Brien, Com. W.S., G. & E.
Tennessee	Nashville	Apr. 15, 3 p.m.	Furn. ten 18-in., one 12-in., thirty-eight 6-in. gate valves.	J. D. Alexander, Chm. Bd. Pub. Wks.
Montana	Harlem	Apr. 17, 2 p.m.	Bldg. water works system for Fort Belknap Indian Agency.	Com'r Indian Affairs, Wash., D. C.
Ohio	East Cleveland	Apr. 17, noon	Furn. and laying 710 ft. 6-in. water pipe in Phillips st.	Henry Wagner, Clk. Village Trustees
Alabama	Faunsdale	Apr. 19	Constructing water works, inc. 2,500 ft. 4 and 6-in. c. i. pipe, 6 double-nozzle fire hydrants, etc.; 40,000-gal. steel tank on steel tower; 40,000-gal. concrete covered reservoir, power house, boiler, pumps, compressor, etc.	Edgar B. Kay, C.E., Riscaloosa.
Utah	Ogden	Apr. 19, 2 p.m.	Constructing a distributing reservoir.	A. F. Parker, City Engineer.
Minnesota	Bemidji	Apr. 19, 8 p.m.	Sinking an artesian well to be furnished with 10-in. casing.	Thos. Malay, City Clerk.
Minnesota	Benson	Apr. 20, 8 p.m.	Constructing steel water tower.	Otto J. Olson, City Clerk.
Missouri	St. Louis	Apr. 20, noon	Pumping station for City Asylum; also boiler-house, two 1,500,000-gal. pumping engines; 200,000-gal. steel elev. tank.	W. B. Dryden, Sec'y Bd. Pub. Impts.
Ohio	St. Henry	Apr. 20, noon	Bldg. water works system; Paul R. Murray, C. E., New Phila.	Wm. F. Schweiterman, Bd. Pub. Affrs
Kansas	McPherson	Apr. 20	Furn. 6,000 ft. 6-in. 33-lbs., 6,400 ft. 4-in. 22-lbs., standard cast-iron water pipe; 9,000 lbs. lead; 250 lbs. hemp; 15 hydrants.	Water and Electricity Dept.
New York	Rome	Apr. 21, noon	Laying 28,583 ft. 30-in.; 2,025 ft. 24-in.; 780 ft. 20-in. c. i. pipe; furn. valves and hydrants; Knight & Hopkins, Engrs.	Harvey S. Bedell, Chm. W. & Sew. Bd.
Ohio	Lorain	Apr. 22	Furnishing and delivering one deep well pump.	O. W. Thomas, Clk., Bd. Pub. Serv.
Pennsylvania	Hazleton	Apr. 22, noon	Bldg. dam and reservoir on Wolff's Run, near city; also for furnishing and laying, or laying only, 4 miles 16-in. c. i. pipe and 10 tons specials.	P. F. Boyle, Pres. Diamond Wtr. Co.
Ohio	Put-in-Bay	Apr. 22, noon	Constructing water works system; C. E. DeWitt, C. E., Pt. Clinton.	L. E. Schraidt, Village Clerk.
Ohio	Elyria	Apr. 22	Furnishing water meters.	Board of Public Service.
Kentucky	Willow	Apr. 23	Constructing 3 cisterns.	U. S. Eng'r Office, Cincinnati. O.
Utah	Salt Lake City	Apr. 23	Water main contracts for year.	L. C. Kelsey, City Engineer.
Missouri	Sikeston	Apr. 26, 7:30 p.m.	Constructing water works system; \$500 check with bid.	M. G. Gresham, City Clerk.
Louisiana	New Orleans	Apr. 27, 3 p.m.	Furnishing brass goods for city.	Geo. G. Earl, Supt. Sew. & Wtr. Bd.
California	Oakland	Apr. 28, 11 p.m.	Labor and material for pipe system for salt-water high-pressure fire system; \$20,000 check.	W. B. Fawcett, Sec'y Bd. Pub. Wks.
Pennsylvania	Altoona	Apr. 29, noon	Continuing construction of Lake Altoona, with accessories, inc. 360,000 cu. yds. embankment and 21,000 cu. yds. rubble concrete; \$1,000 check; Knight & Hopkins, Engrs., Rome, N.Y.	H. K. McCauley, Chm. Water Bd.
Texas	Vernon	May 1	Constructing \$15,000 water works.	L. P. Bowner, Mayor.
North Dakota	Velva	May 4, 8 p.m.	Constructing water main extensions; check, \$500.	O. Claussen, C.E., St. Paul, Minn.
Arizona	Bisbee	May 4, 7 p.m.	Furn. and erecting three 250,000-gal. each steel tanks.	Geo. S. Gage, City Clerk.
California	Petaluma	May 5, 7 p.m.	Furn. and install. pump. mach. for salt-water high-pressure sys.	City Clerk.
Kentucky	Madisonville	June 1, noon	Purchase of water works franchise.	Jas. L. Brown, City Clerk.
Philippine Is.	Manila	June 1, noon	Furnishing 7,000 tons c. i. pipe, hub and spigot; 56 tons 20-in. flexible joint and flange c. i. pipe; 2 tons flanged c. i. pipe; 200 tons c. i. specials; J. F. Chase, Ch. Engr. Dept. Sewers & Water Com.	H. L. Fischer, Sec'y Municipal Bd.
SEWERAGE				
Oklahoma	Ada	Apr. 15, 5 p.m.	Bldg. storm and drainage sewer on Twelfth and Main sts.; also for constructing sanitary sewers for city.	W. B. Jones, City Clerk.
Indiana	Fort Wayne	Apr. 15, 7:30 p.m.	Bldg. vit. pipe sewers in 2 alleys.	Edw. Lennon, Chm. Bd. Pub. Wks.
South Dakota	Highmore	Apr. 15	Constructing 3,200 ft. of sewer.	J. H. Pilkington, City Auditor.
New York	Haverstraw	Apr. 15	Laying 1,200 ft. 12-in. c. i. submerged pipe for sewer outlet, inc. dredging trench 15 ft. below low water; trench 12 to 7 ft. deep.	Alex. Potter, 143 Liberty St., N. Y. C.
Nebraska	Wayne	Apr. 15	Constructing sewerage system; date extended from Mar. 22.	Martin L. Ringer, City Clerk.
Texas	Plainview	Apr. 15, 3 p.m.	Furn. material and bldg. sewer system and water works, complete, including 1,850 ft. 12-in., 4,400 ft. 10-in., 8,100 ft. 8-in., 28,100 ft. 6-in. vit. pipe; septic tank, filter beds, etc.	E. L. Dalton, C.E., Dallas, Tex.
New Jersey	Carlstadt	Apr. 15, 8:15 p.m.	Bldg. sanitary sewer system and disposal plant, inc. 14 miles 8 to 9-in. sewers, and 14 miles of 6-in. house connections.	George Zimmerman, Mayor.
Ohio	Circleville	Apr. 15, noon	Constructing sewage disposal plant at County Infirmary.	County Commissioners.
Ohio	Warren	Apr. 15, noon	Constructing storm sewer, Washington ave., et. al.	Z. F. Craver, Chm. Bd. Pub. Serv.
Ontario	Port Francis	Apr. 15, 8 p.m.	Furn. material and bldg. sewerage and water works.	W. H. Elliot, Town Clerk.
Oklahoma	McAlester	Apr. 15, 8 p.m.	Bldg. sanitary sewers to cost \$76,001, and storm water sewers, \$25,447; also Sandy Creek improvement, cost, \$40,000, inc. excav., fill, revetment, concrete side walls and bottom, 6,093 ft. long.	J. Phelan, City Engineer.
Wisconsin	La Crosse	Apr. 15, 2 p.m.	Bldg. 8,651 ft. sewer, from 24-in. circular pipe to 32x72-in. egg-shaped reinforced concrete sewer; cost, \$73,909.	A. J. Roberge, Supt. of Sewers.
Massachusetts	North Andover	Apr. 15, 8 p.m.	Bldg. 2 miles of pipe sewer, material furnished by town.	E. W. Bowditch, C.E., Devonshire St., Boston.
South Carolina	Manning	Apr. 15, noon	Bldg. sewer system: 8,500 ft. 8 and 10-in. vit. pipe, 15 manholes.	Lee & McLellan, Engrs., Sumter.
Nebraska	Alliance	Apr. 15	Constructing sewer system; probable cost, \$45,000.	Andrew Rosewater, C.E., Omaha.
Illinois	Waukegan	Apr. 16, 5 p.m.	Constructing 18,854 ft. 60, 42, 36, 30 and 24-in. concrete sewer; 600 ft. 18-in. vit. tile sewers, manholes, etc., Ravine Dist.	Wm. S. Bullock, Pres. Bd. Loc. Impts.
Kentucky	Louisville	Apr. 16, noon	Bldg. Vernon ave. sewer, 9,500 ft. 8-27-in. pipe in trench, 18 ft. or less; Contract 30; estimated cost, \$25,000.	J. B. F. Breed, Ch. Eng. Com. of Sewers.
Wisconsin	Racine	Apr. 17, 10 a.m.	Constructing and reconstructing sewers.	P. H. Connolly, Chm. Bd. Pub. W.
Wisconsin	Oshkosh	Apr. 17, 2 p.m.	Constructing sewers in sundry streets.	W. A. Marden, Chm. Bd. Pub. Wks.
Pennsylvania	Pittsburg	Apr. 19, 10 a.m.	Constructing 8 to 18-in. sewers, various sts.; 13 jobs.	Jos. G. Armstrong, Dir. Pub. Wks.
Pennsylvania	Erie	Apr. 19	Bldg. sewer system, 9 to 15-in. diameter; estimate, \$44,000.	B. E. Briggs, City Engineer.
New York	Fulton	Apr. 19, 8 p.m.	Constructing 4,800 ft. 10 to 20-in. pipe sewer.	W. A. Harrison, City Clerk.
New Jersey	Millburn	Apr. 19, 8 p.m.	Bldg. 3,625 ft. 8-in. pipe sewer, 5 to 14 ft. deep in various sts.	Alex. Potter, 143 Liberty St., N. Y. C.
Iowa	Burlington	Apr. 19, 4 p.m.	Constructing pipe sewers; John F. Winters, City Engineer.	Robt. Kroppach, City Clerk.
Oklahoma	Oklahoma City	Apr. 19, 5 p.m.	Constructing st. m sewer on Olive ave. and other streets.	Geo. Hess, City Clerk.
Indiana	Indianapolis	Apr. 20	Bldg. \$40,000 concrete, brick or pipe sewer in Miller st.	Blaine H. Miller, City Engineer.
New York	New Br'ton, S. I.	Apr. 20	Bldg. sewers in Richmond turnpike and Dist. No. 2-A.	Geo. Cromwell, Pres. Boro. Richm'd.
New York	Gloversville	Apr. 20, 5 p.m.	Constructing 4,000 ft. 8 and 10-in. sewer pipe line.	M. V. B. Stetson, City Clerk.
New York	New York	Apr. 20	Bldg. sewers, 8 sts., inc. 5,946 ft. 10 to 30-in. sewers.	Louis F. Haffen, Pres. Boro. Bronx.
Wisconsin	West Allis	Apr. 20, noon	Furn. material and bldg. brick and pipe sewers.	L. F. Fish, City Clerk.
New York	Auburn	Apr. 20, 8 p.m.	Bldg. 53,750 ft. 8 to 24-in. sewer in 5 to 20-ft. trench, to include 75,300 cu. yds. excav., 23,600 ft. 5-in. vit. tile house connections, 180 manholes, etc., as shown under "Proposals"	W. Thomas Wooley, City Engineer
Alabama	Birmingham	Apr. 21, 11 a.m.	Bldg. brick and concrete sewers, 7 sections, to cost about \$230,000; old bids, given Feb. 24 issue, rejected.	Maury Nicholson, City Engineer.
Ohio	Columbus	Apr. 21, noon	Bldg. sewer pipe drain along W. Fifth ave.	F. M. Sayre, County Auditor.
Kentucky	Franklin	Apr. 21, 11 a.m.	Constructing 3 1-2 miles pipe sewers, 46 manholes, 24 flush-tanks, 1 septic tank; Granbery Jackson, C.E., Nash., Tenn.	J. H. Covington, Mayor.
Ohio	Columbus	Apr. 21, noon	Constructing sewers, etc., portions of 3 streets.	E. W. Hirsch, Secy. Bd. Pub. Serv.
Utah	Salt Lake City	Apr. 23	Bldg. pipe sewers in Sewer Extension No. 227.	L. C. Kelsey, City Engineer.
Oklahoma	Enid	Apr. 23	Constructing 3,300 ft. of storm sewer; 1,200 ft. 6-ft., 1,600 ft. 7 1-2-ft., 475 ft. 4-ft. vit. plain or reinforced concrete sewer.	C. H. Sexton, City Engineer.
Dist. of Col'bia	Washington	Apr. 26, noon	Constructing sewers in Fourth st.; also Luzon ave. trunk sewer and sewer in valley north of R St.	Maj. W. V. Judson, Eng'r Com'r.
New York	Gloversville	Apr. 30	Constructing 4,000 ft. 8 and 10-in. sewer pipe line.	Morrell Vrooman, City Engineer.
Ohio	Cleveland H'ghts	May 3, noon	Bldg. sewers in No. Woodland road; also joint sewers.	Wm. H. Evers Eng. Co., Arcade, Clvid.
Wisconsin	Janesville	May 4, 2 p.m.	Constructing 3,940 ft. 8-in. pipe sewer.	S. B. Heddles, Chm. St. Ass. Com
Ohio	Newburg	May 5, noon	Constructing sewers in Ingersoll road and other streets, jointly with village of Cleveland Heights.	E. T. Lawrence, Clerk of Council.
New York	Syracuse	May 18, noon	To construct 2 1-3 miles main intercepting sewer from 90 to 33 inches in diameter. The principal items a e 90,000 cu.-yd. excavation and 6,000 cu.-yd concrete. check, \$10,000.	Harry J. Hamlin, Secretary, Sewer Bd.
BRIDGES				
New York	New York	Apr. 15, 2 p.m.	Furn. and installing new gates, wedges and latch and altering towing apparatus for Washington ave. bridge over Wallabout Canal, Bklyn., also repairs to asphalt pavements on bridges over Harlem.	J. W. Stevenson, Com'r Bridges.
Tennessee	Chattanooga	Apr. 15	Bldg. steel truss hwy. bridge over W. Chickamauga Crk., at Mills	E. E. Betts, C.E., 905 James Bldg

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES—Continued				
Ohio	Cincinnati	Apr. 16, noon	Bldg. concrete bridge on Old State road, Miami twp., Spec. 870.	Stanley Struble, Pres. Co. Comrs.
Ohio	Logan	Apr. 16, 1 p.m.	Bldg. concrete arch bridge, 115 ft. center to center long, 18-ft. roadway; also steel superstructure 150 ft. long; kreodone plank and block flooring.	James L. Martin, County Auditor.
Pennsylvania	Lock Haven	Apr. 16, 2 p.m.	Bldg. reinforced concrete bridge over Joe's Run in Falls twp.	County Commissioners.
Pennsylvania	Wilkes-Barre	Apr. 16, 2 p.m.	Reparing and superstructure bridge over Hunlock Creek.	James M. Norris, County Controller.
Indiana	Greenfield	Apr. 17, 10 a.m.	Bldg. Pope Crossing bridge over Brandywine river.	Chas. H. Troy, County Auditor.
Ohio	Zanesville	Apr. 19, noon	Bldg. concrete girder highway bridge.	L. E. Brelsford, County Auditor.
Pennsylvania	Allentown	Apr. 19, 1:30 p.m.	Alterations and repairs to superstructures 2 bridges.	J. S. Troxell, Clk. Co. Comrs.
Oregon	Toledo	Apr. 20	Rebldg. bridge over Lentz Slough at Waldport; bidders plans.	Clerk of Lincoln County.
California	Pasadena	Apr. 20	Constructing steel tie arch culvert over Mentor ave.	S. J. Van Ornum, City Engineer.
Ohio	Marietta	Apr. 20, noon	Bldg. sub. and superstructures of bridges, abutments, etc.	A. F. Cole, County Auditor.
Ohio	Hamilton	Apr. 20, 10 a.m.	Substructure and bridge over creek, Section 9, Oxford twp.	J. E. Brate, County Auditor.
Nebraska	Lincoln	Apr. 20, 2 p.m.	Material and labor for all bridges ordered during year.	W. L. Dawson, County Clerk.
Tennessee	Rogersville	Apr. 21	Bldg. 350 ft. steel bridge, 400 ft. steel trestle; also small one.	J. R. Sanders, Chm. Co. Pike Comm.
South Carolina	Spartanburg	Apr. 23	Constructing Enoree bridge over Enoree river.	D. M. Miles, County Supervisor.
South Carolina	Spartanburg	Apr. 24	Constructing Kilgore, Van Patton and Woodruff bridges.	D. M. Miles, County Supervisor.
Indiana	Richmond	Apr. 24	Constructing new bridges for County; cost, \$25,000.	Board of County Commissioners.
Iowa	Cedar Rapids	Apr. 24, 2 p.m.	Bldg. steel rein. concrete bridge, seven spans of 80 ft., 40 ft. wide, inc. two 5-ft. walks; removing old steel bridge, etc.	P. P. Smith, City Engineer.
New Brunswick	Fredericton	Apr. 25	Bldg. 4 metal spans, each 260 ft. long, pin-connection.	John Morrissey, Dept. Pub. Wks.
Virginia	Norfolk	Apr. 26, 12:30 p.m.	Bldg. rein. concrete bridge.	W. T. Brooke, City Engineer.
Massachusetts	Newburyport	Apr. 27, 10 a.m.	Rebldg. old Chain Bridge over southerly arm of Merrimac river, inc. removing necessary portions and bldg. complete new anchorages, cables, steel stiffening trusses, towers, steel floor beams and wooden floor, etc., suspended span, 226 ft. long.	James P. Hale, Clk., Essex Co. Comrs.
Ohio	Cincinnati	Apr. 30, noon	Bldg. concrete culvert on Springfield road, Spec. 863.	Fred. Dreihls, Clk. Co. Comrs.
Georgia	Savannah	May 3, noon	Bldg. rein. concrete locks and bridges, 2 canal outlets.	G. Reuben Butler, Clk. Co. Comrs.
Pennsylvania	Wilkes-Barre	May 4, 2 p.m.	Cleaning well all iron and steel and removing scales, blisters and loose rust and thoroughly painting, 13 bridges, 27 to 79 ft. long, paint to have 5 years guarantee.	Jas. M. Norris, County Controller.
Iowa	New Hampton	May 4, 1 p.m.	Constructing 10 concrete bridges; entire or separate.	F. N. Lentz, County Auditor.
LIGHTING AND ELECTRICITY				
Oklahoma	Lehigh	Apr. 15	Constructing electric light plant to cost \$12,500.	John Rogers, City Clerk.
Manitoba	Winnipeg	Apr. 15, 11 a.m.	Furn. 2 testing transformers, one 300 k.w. at 80,000 volts, and one 200 k.w., at 200,000 volts, and control equipment.	F. E. Cambridge, City Electrician.
New York	New York	Apr. 16	Furn. and install mechanical and electric equipment on Piers No. 53-62, North river, in Chelsea section; Cont., 1150; Security, \$300,000.	Allen N. Spooner, Com'r of Docks.
Ohio	Hartwell	Apr. 16, noon	Add steam and elec. equip. power plant at Infirmary.	John J. Wenner, Clk. Bd. Co. Comrs.
New York	New York	Apr. 19, 11 a.m.	Installing electric equipment, etc., Public School No. 87.	C. B. J. Snyder, Supt. School Bldgs.
Mississippi	Vicksburg	Apr. 19, 8 p.m.	Lighting streets of city with gas or electricity.	H. J. Trowbridge, City Clerk.
Pennsylvania	South Bethlehem	Apr. 19	Lighting streets, etc., of borough.	Chairman Elliott of Lamp Com.
Nebraska	South Omaha	Apr. 19	Furn. gas or electricity for lamps, inc. maintenance for 5 or 10 year period beginning October 26.	John J. Gillin, City Clerk.
North Dakota	Ellendale	Apr. 20, 10 a.m.	Installing electric light plant; bldg. power house, etc., at State Normal Industrial School.	W. M. Kern, Sec'y Indus. School.
Ohio	Columbus	Apr. 21	Furn. and install additional machinery for city light plant, inc. high-pressure condensing steam turbine for driving dir-con. generator of 2,000 k.w., turbine type alternator; 2,000 k.w. surface condenser, additional switchboard, etc.	E. W. Hirsch, Sec'y Bd. Pub. Serv.
Wyoming	Ft. D. A. Russel	Apr. 24, 9:30 a.m.	Bldg. and remodeling electric light system, inc. furn. all watt meters and transformers; bldg. sub station, wiring, arc lamps.	Capt. V. K. Hart, U. S. A., Cheyenne.
Virginia	Richmond	Apr. 27, 5 p.m.	Constructing electric light and power plant.	Charles E. Bolling, City Engineer.
Ontario	Toronto	Apr. 30, noon	Supply of underground cable.	Joseph Oliver, Mayor.
Alberta	Medicine Hat	Apr. 30	Drilling a gas well for city.	W. P. Morrison, City Engineer.
Dist. Columbia	Washington	Apr. 30, 3 p.m.	Bronze railings and lamp standards for east front of Treasury.	James Knox Taylor, Super. Arch.
Tennessee	Ripley	May 10	Furn. engines, boilers, etc., and installing 15-ton ice plant.	W. A. McCalhoun, Mgr. Light Co.
Oregon	Portland	May 14	Lighting sts., aves., bldgs. and public places with incandescent lights for 3 or 5 years; also bldgs., with gas, etc.	A. L. Barbur, City Auditor.
MISCELLANEOUS				
New York	New York	Apr. 15, 5 p.m.	Reconstructing and putting fire alarm system in condition.	D. J. Coutant, City Clerk.
New York	New York	Apr. 15, 10 a.m.	Furnishing and delivering telephone supplies for Police Dept.	Theo. Bingham, Police Comr.
Pennsylvania	Carnegie	Apr. 15, 7 p.m.	Hauling, removing and disposing of all garbage and refuse, animal and vegetable matter, for 1, 5 and 10 years.	George Rosser, Borough Clerk.
Tennessee	Chattanooga	Apr. 15, noon	Completion of Mission Ridge tunnel; cost, \$122,424.	W. L. Dodds, County Engineer.
Oklahoma	McAlester	Apr. 15, 8 p.m.	Improving Sandy Creek, distance of 6,093 ft., estimate \$40,000; excav., filling, retreating, concrete sidewalks and bottom.	J. Phelan, City Engineer.
New Jersey	Elizabeth	Apr. 15	Constructing steel pier shed, 140x40 feet.	W. H. Luster, Jr., City Surveyor.
New York	Prospect Park	Apr. 15, 8 p.m.	Collecting and disposing of ashes and garbage, 1 yr. from May 1.	Thomas Fraser, Boro. Clerk.
New York	New York	Apr. 15	Furn. petrol motor hose wagon for Shanghai, China.	Fearon, Daniel & Co., 69 Wall St.
Virginia	Richmond	Apr. 15, noon	Bldg. fifty-ton crematory or incinerator in brick building.	Henry I. Cohn, Supt. St. Cleaning.
Saskatchewan	Belle Plaine	Apr. 15	Constructing telephone system for Stoney Beach Tel. Co.	John Poyser.
Manitoba	Brandon	Apr. 16, 4 p.m.	Supplying 1,000 to 2,000 bbls. Portland cement for year.	Harry Brown, City Clerk.
Ohio	Columbus	Apr. 16, noon	Maps and tracings of Franklin County for real estate appraisal; 3 contracts: City of Columbus; Villages and suburban lots; Township acreage.	F. M. Sayre, County Auditor.
New York	West Point	Apr. 16, noon	Constructing garbage crematory.	Quartermaster.
Pennsylvania	Williamsport	Apr. 16, noon	Furn. one or more 2-horse st. sweepers; steel tank sprinklers; pick-up carts and cans; push brooms.	O. H. Young, Chm. Hwy. Com.
Illinois	Chicago	Apr. 16, 11 a.m.	Bldg. dock on South side Chicago riv. at No. Sangamon st.	John J. Hanberg, Com. Pub. Wks.
New York	New York	Apr. 16, noon	Sprinkling certain new made land, North and East rivs., Man.	Allen N. Spooner, Comr. of Docks.
New York	New York	Apr. 16, noon	Extending, etc., underground fire-alarm telegraph system.	Nicholas Hayes, Fire Commissioner.
Tennessee	Nashville	Apr. 17, 10 a.m.	Furn. and delivering 700,000 ft. b.m. long leaf yellow pine l'mbr.	Maj. Wm. W. Harts, U. S. Engrs.
New York	New York	Apr. 19, noon	Disposal of st. sweepings and from piers, etc., 3 boroughs.	Allen N. Spooner, Comr. of Docks.
Florida	Jacksonville	Apr. 19	Furnishing \$1,500 fountain for Hemming Park.	Chm. Wambolt, Bd. Pub. Wks.
Illinois	Chicago	Apr. 19, 11 a.m.	Reconstructing dock for fire-boat.	James Horan, Fire Marshal.
New York	New Brighton, S.I.	Apr. 20	Furn. st. signs, inc. standard and enamel name-plate.	Geo. Cromwell, Boro. Pres.
Pennsylvania	Mt. Pleasant	Apr. 20, 8 p.m.	Erecting new municipal building.	M. A. King, Boro. Secretary.
New York	New York	Apr. 20, noon	Furnishing 500 bbls. Portland cement at points in Richmond.	Geo. Cromwell, Boro. Pres., Richm.
Indiana	Decatur	Apr. 20, 7 p.m.	Constructing a city building.	O. B. Wernhoff, City Clerk.
Illinois	Chicago	Apr. 21, noon	Furn. 5,000 ft. 1 1/2-in. 4-ply and 25,000 ft. 1-in. 3-ply hose.	E. G. Shumway, So. Park Com'r's.
Michigan	Grand Rapids	Apr. 22	Constructing dock line wall and excavating in river.	S. A. Freshney, Bd. Pub. Wks.
West Virginia	Wheeling	Apr. 23, 11 a.m.	Furnishing 9,000 bbls. Portland cement Dam No. 26, Ohio river.	Capt. F. W. Allstaetter, U.S. Engr. Corp.
Ohio	Cincinnati	Apr. 23	Constructing Lock No. 13 on Kentucky river at River Shoals, 375 to 400 ft. long; cost, \$325,000, inc. coffer dam and excav.	U. S. Engr. Office.
New York	Schenectady	Apr. 26, 2 p.m.	Constructing Schenectady County Court House.	W. L. Stoddart, Arch., 31 Un.sq., N.Y.
Brit. Columbia	Prince Rupert	Apr. 27	Bldg. rein. concrete wharf with timber superstructure.	Dept. Pub. Wks., Victoria.
New Jersey	Hoboken	Apr. 28, 4 p.m.	Bldg. public comfort and storage house, tool house, etc.	James H. Londrigan, City Clerk.
Texas	Houston	May 1	Improving, etc., San Jacinto State Park, inc. wharf and pagoda and keeper's reinforced concrete residence.	W. C. Day, care Union Bk. & Trus. Co.
South Carolina	Charleston	May 3, noon	Constructing 4,080 ft. concrete retaining wall and filling 670,000 cu. yds. behind same with material dredged from river.	J. H. Dingle, City Engineer.
Ohio	Columbus	May 3, 11 a.m.	Erecting front addition to Court House at Waverly.	C. E. Emory, Clk. Co. Comrs.
Ohio	Bryan	May 3, 11 a.m.	Furnishing maps and plates of County.	R. H. Weaver, County Auditor.
Indiana	Vincennes	May 4, 2 p.m.	Erecting 2 Fire Department buildings; J. W. Gaddis, Architect.	C. L. V. Tucker, City Clerk.
Louisiana	New Orleans	May 11	Fabrication and erection of structural steel and cast iron for additions to three steel sheds on wharves.	Hugh McCloskey, Pres. Port Comrs.
Hawaii	Honolulu	May 14, noon	Furn. 25,000 bbls. Portland cement.	E. E. Winslow, Eng. Corps, U. S. A.
Ohio	Columbus	July 15, noon	Bldg. concrete retaining wall; Contract No. 18, inc. 800 cu. yds. excav., 765 cu. yds. loam, 1 acre seeding, 220 sq. yds. sodding, 800 cu. yds. concrete, 2,000 lbs. twisted steel rods.	E. W. Hirsch, Sec'y Bd. Pub. Serv.
Illinois	Chicago	Sept. 15	Furn. voting machines up to \$100,000 value.	Election Commissioners.

STREET IMPROVEMENTS

Birmingham, Ala.—Council has repealed ordinance for paving Third avenue and is considering another ordinance proposing that it be paved with vitrified brick.

Talladega, Ala.—Citizens will vote in the near future on \$20,000 bonds for paving and extension of sewer system.

Russellville, Ark.—City is considering construction of about 14 miles of concrete sidewalks.

Redwood City, Cal.—Council is considering street improvements.

Sacramento, Cal.—The City Trustees have ordered plans for the improvement of J street with concrete base and asphalt surface and G street with oiled macadam.

Sacramento, Cal.—Governor J. N. Gillett has signed bill providing for the issuing of \$18,000,000 bonds for State highway improvements.

Sawtelle, Cal.—Commercial Club is urging the building of a boulevard paralleling the Los Angeles Pacific Company's trolley line to Beverly.

Denver, Col.—Senate has passed bill providing for an appropriation of \$56,000 for constructing interstate highways.

Denver, Col.—The Legislature has passed a bill appropriating \$5,000 for a State road from Pueblo to Leadville.

Denver, Col.—City will extend Broadway from Twentieth avenue to Blake street at a cost of \$50,000.

Leadville, Col.—City has appropriated \$6,000 for street purposes.—H. C. Rose, Mayor.

Jacksonville, Fla.—Duval County will vote May 11 on \$1,000,000 bonds to create funds for the purpose of constructing more good roads in the county.

Decatur, Ga.—DeKalb County is considering constructing macadam road from Decatur to Lathonia; distance, about 22 miles.—R. J. Freeman, County Commissioner.

Macon, Ga.—Council is considering an ordinance calling an election, June 19, on \$250,000 paving bonds.

Aurora, Ill.—Bids have been asked for the paving of River street between Galena and Downer place.

Aurora, Ill.—City is considering ordinance providing for the construction of numerous sidewalks.

Casey, Ill.—Council has authorized the issue of \$9,000 bonds for completing paving of Main street.

Chicago, Ill.—The Board of Local Improvements is considering the repaving of Madison street with creosoted blocks.

Chrisman, Ill.—The construction of a ¼-mile macadam road is being considered.

Jacksonville, Ill.—City is considering the paving of West College street and a pavement on Franklin street.

Lawrenceville, Ill.—The Board of Local Improvements will receive bids about May 1 for paving Main street with brick.—G. C. Harvey, Mt. Carmel, Ill., Engineer; W. S. Titus, Chairman.

Evansville, Ind.—The Board of Public Works has received a petition for the improvement of Madison avenue with asphalt.

Huntington, Ind.—Bids will soon be asked for the construction of a county rock road in Clear Creek Township.

Michigan City, Ind.—Pine Township Porter County, has voted for proposed road improvements; 8 miles of road will be improved; cost about \$30,000.

New Albany, Ind.—The Board of Public Works has adopted plans for the improvement of Shelby street; specifications call for vitrified brick, asphalt, bitulithic and creosote block.

Richmond, Ind.—Bids will soon be received for grading and graveling of Southwest Second and Southwest Sixth streets, and construction of cement sidewalks, curb and gutters on South A street; curbs and gutters on Fourteenth street.

Vincennes, Ind.—City Civil Engineer Hershey has estimated the cost of improving Barnett street at \$5,167.07.

Council Bluffs, Ia.—Street Commissioner T. F. Flood has recommended the paving of Upper Broadway.

Des Moines, Ia.—Council has passed a resolution providing for the pavement of West Fifth street with sheet asphalt.

Sioux City, Ia.—Council has ordered curbing and guttering on ten streets, the repaving of Nebraska street and the resurfacing of Jackson and Pearl streets.

Manhattan, Kan.—City is considering the paving of various streets.—H. W. Hungerford, City Clerk.

Fulton, Ky.—Surveys are being made for street and sewer improvements, covering about 10 miles of streets.—T. D. Johnson, Jr., City Engineer; J. T. Tyler, City Clerk.

Lexington, Ky.—Council has ordered reconstruction of Short street and sidewalks on Church, North Limestone, East and West Main and West South streets.

Lexington, Ky.—Council has given first reading to ordinance fixing specifications

for the brick street work to be done in the city this year; ordinance fixes amount of rock, cement and other material to be used in the work.

Lexington, Ky.—Council is considering an ordinance directing the Board of Public Works to buy five carloads of paving brick at a cost not exceeding \$19.50.

Lexington, Ky.—The Joint Improvement Committee has recommended the construction with macadam of Ransom and Pratt avenues.

Maysville, Ky.—Council has ordered bids advertised for laying sidewalks on Fourth street.

New Orleans, La.—The Streets and Land- ing Committee is considering the paving of Bergundy street with granitoid; Hospital street with bitulithic; Locust street with rock asphalt; Elm street with bitulithic and Joseph street.

New Orleans, La.—The Budget Committee has given favorable report to ordinance for the paving of Bank street with asphalt; Newton and Elmira streets with bitulithic, and Chartres street with asphalt.

Baltimore, Md.—The State Road Commission is rushing plans for the improvement of turnpike roads in the Baltimore annex; work will begin about May 1; \$1,375,000 is available.

Baltimore, Md.—Council is considering the widening of Light street and the paving of Howard.

Elkton, Md.—Ceel County Commissioners will have roads repaved this year by contract instead of by day labor.

Boston, Mass.—Finance Committee is considering an ordinance appropriating \$500,000 to be expended by the Street Commissioners for the construction of new streets.

Haverhill, Mass.—Council has decided to provide granolithic walks on all the principal streets, petitioned for by property owners; \$10,000 bonds will be issued; also ordered the following streets macadamized: North street, cost, \$700; Cedar street, Tenth to Eleventh avenue, \$700; Cedar street, Fifth to Sixth avenue, west side, \$300; Bartlett street, \$500; Broadway, \$4,000; Lafayette, \$1,100; North avenue, \$3,000; Main street, \$4,000; Pleasant street, \$2,500; River street, \$2,300; Salem street, \$2,000; Kenzoa avenue, \$2,900; Primrose street, \$3,000; Groveland street, \$3,300, and River street, block paving, \$1,600; total cost, \$31,900; amount of bond issue for street construction, \$41,000; balance of last issue to be expended through the year, \$9,100.

Lanesboro, Mass.—Town has appropriated \$1,000 for highways and bridges.

Lawrence, Mass.—Council has voted to pave Essex street, the main thoroughfare of the city, with wooden block.—Arthur D. Marble, City Engineer.

Lenox, Mass.—Town has voted \$5,000 appropriation for a permanent road to Lenoxdale.

Monson, Mass.—Town has appropriated \$5,000 for highways.

Southwick, Mass.—Town has voted \$1,800 for highways.

Westfield, Mass.—Town has voted to macadamize Union street, cost \$6,600; Court street, cost \$2,400, and grade Southwick road, cost \$2,500.

Detroit, Mich.—Council has directed the Department of Public Works to advertise for proposals for paving Superior street; cost, \$17,249; also Bellevue avenue, \$8,354.—J. J. Haarer, Commissioner.

Highland Park, Mich.—City is considering paving of portions of Woodward avenue; cost, \$100,000.

Highland Park, Mich.—Wayne County Good Roads Commission is receiving bids for paving city line to Woodward avenue, including one mile cement road.—G. A. Dingman, Engineer; E. N. Hines, Detroit, Chairman.

Duluth, Minn.—Property owners along Garfield avenue are considering the paving of that thoroughfare.

Duluth, Minn.—Board of Public Works is considering paving of Fourth street with tar macadam; cost, \$60,000; Twentieth avenue East, \$20,000; Twenty-fifth avenue East, \$20,000; Eleventh avenue East, \$15,000, and Sixth street, \$15,000.

St. Paul, Minn.—Legislature has appropriated funds for road and bridge work in various counties as follows: Olmsted, \$7,500; Fillmore, \$4,200; Dodge, \$3,700; Steele, \$2,700; Houston, \$3,750; Mower, \$3,525; Winona, \$4,200; Wabasha, \$3,600; Goodhue, \$4,050; Hennepin, \$10,200, and Cook, \$750.

Wilmar, Minn.—County Board will expend \$2,100 on a new road between Wilmar and New London.

Corinth, Miss.—City has sold \$25,000 bonds to the First National Bank; money will be used to repair streets and extend water plant.

St. Joseph, Mo.—Buchanan County Board of Commissioners is considering the grading of Agency Road.—S. P. Smith, County Clerk; L. M. Stallard, Engineer.

Missoula, Mont.—Council has passed a resolution creating a special improvement

district out of University avenue and providing for the parking and boulevarding of the street.

Bayonne, N. J.—City Engineer F. W. Dalrymple is preparing plans for the improvement of Broadway; cost, \$225,000.

Cape May, N. J.—The proposed ocean boulevard to be constructed from the Highlands to Cape May will not be constructed this year.—Frederick Gilkyson, State Road Commissioner.

Haddonfield, N. J.—Council has ordered paving laid on Avondale and Redmond avenues; specifications have been presented for all paving done on borough highways; brick crossings have been reduced in plans from six to five feet.

Harrison, N. J.—Council has passed ordinances providing for the paving of New street with bitulithic, and Warren and Washington streets with Telford and bitulithic.

Kearny, N. J.—Council is considering the paving of Davis avenue.

Newark, N. J.—The Board of Works has given third reading to ordinances for the repaving of Arlington street and the paving of Delavan avenue.

Perth Amboy, N. J.—Council is considering petitions for the paving of State and Penn streets.

Roosevelt, N. J.—Council has passed on third reading ordinance requiring cement sidewalks on Rahway avenue.

Rutherford, N. J.—The Bergen County Freeholders are considering the feasibility of constructing a county road from North Arlington to Suffern, N. Y., a distance of about 25 miles; also plans for a road proper from Fort Lee to the Passaic River along the Paterson boundary line.

Trenton, N. J.—Senator Wakelee's bill authorizing the Interstate Fallsade Park Commission to construct a road to be known as the Hendrick Hudson drive along the summit of the Fallsades in Bergen County, has been favorably reported by the House.

Washington, N. J.—The Board of Freeholders has ordered bids advertised for the construction of 8½ miles of macadam road from Port Colden to Hackettstown by way of Beattystown; work will begin this summer.—J. R. Thatcher, City Director.

Brooklyn, N. Y.—Citizens are urging the paving of Ocean avenue.

Buffalo, N. Y.—City has ordered contracts made for repaving the following streets: Babcock, Bean, Elm, Glenwood, Johnson, Louisiana, Lawrence, Peckham and Seneca; plans have been ordered as follows: Amherst, Blossom, Eagle, Elmer, Elmwood, Fell, Guthrie, Van Rensselaer, Vary and William; streets which have been certified as inexpedient to repair are Auburn, Elmwood, Highland to Ferry and Auburn to Lafayette; Carroll; portion of Grant street; Main, Seneca, and a great part of William street.

Buffalo, N. Y.—City has decided to grade and macadamize Hamburg turnpike.

Buffalo, N. Y.—City is considering the repaving of Broadway between Herman street and Bailey avenue.

Canandaigua, N. Y.—The Board of Trustees is considering the macadamizing of Chapel street.

Hempstead, L. I., N. Y.—Greenwich street from Front street south to the village line will be paved.

Long Island City, N. Y.—As a result of consents filed with the Commission appointed to condemn land for the viaduct from the Queensboro Bridge across the Sunnyside yards, the work of clearing the way for this much-needed improvement can be commenced soon; Condemnation Commission, consisting of John Anderson Leach, Clifford M. Tappan, and George V. Todd, will condemn a boulevard 100 feet wide for its full length which will give direct connection with Thomson avenue and with Brooklyn; viaduct will extend across the Sunnyside yards; it will come to the surface at Van Dam street, and that street will be widened 100 feet to Thomson avenue; Van Dam street will be widened 100 feet to Greenpoint avenue and then along Greenpoint avenue to Review avenue and along Review avenue to Newtown Creek.

Rochester, N. Y.—Council has adopted the following final ordinances: Flint street, asphalt pavement, estimated cost \$25,000; Flower City Park, brick pavement, \$24,000; Edwards street, brick pavement, \$8,000; Alexander street pavement, \$11,000; Mohawk street walks, \$250; North street walks, \$250; Home place, Medina improvement, \$1,400; Goodman street walks, \$250; care and embellishment of Raines Park, \$300; Albemarle street, \$75; Selye terrace, \$150; Riverside street, \$50; Glendale Park, \$100, and Portsmouth terrace, \$700; Mt. Vernon avenue, pavement and sewer, \$29,500.

Schenectady, N. Y.—The Department of Public Works will expend \$8,000 for repairs of the macadam roadway and \$12,000 in repaving asphalt pavements.—Commissioner Pond.

Seneca Castle, N. Y.—Town will lay a

cement sidewalk on the south side of Main street.

Syracuse, N. Y.—City is considering the resurfacing of South Salina street; cost, \$36,000.—H. C. Allen, Engineer.

Syracuse, N. Y.—Commissioner of Public Works F. M. Westcott has estimated the cost of paving Butternut street as follows: For the use of sandstone block or creosoted wood block, \$5,710; for asphalt, vitrified brick or block, bitulithic or bituminous macadam, \$4,225, and for macadam, \$2,950.

Yonkers, N. Y.—Bids will be received by the Board of Contract and Supply for regulating and grading Bronx Parkway, from Bronx River to Vermont terrace; for regulating and grading Arlington avenue and Romaine avenue.—J. D. McIntyre, Manor Hall, Secretary.

Alliance, O.—Citizens will vote May 24 on the repaving of Main street; bonds will be issued.

Bellefontaine, O.—Street Committee has reported favorably on brick paving on North Elm street.—Jas. I. Fogarty, Committeeman.

Cambridge, O.—The Guernsey County Commissioners have decided to improve six miles of State roads this summer; one-half will be macadamized and the other paved with brick.

Cleveland, O.—City will receive bids April 19 for \$76,000 street improvement bonds and for \$288,000 street improvement bonds.—Thomas Coughlin, City Auditor.

Columbus, O.—State Highway Commissioner James C. Wonders has announced that \$490,000 will be expended in improving roads in all parts of the State.

Coshocton, O.—Council has passed an ordinance to issue \$15,000 bonds for improving Fifteenth street by paving.

Dayton, O.—City Engineer F. R. Cellarius has submitted estimates to the Public Service Board for paving as follows: Louie street, with asphalt, \$9,037; brick, \$7,852. Germantown street, with asphalt, \$13,900; with brick, \$11,891.

Toledo, O.—Bids are being advertised for sidewalk building, for which \$20,000 is available.

Youngstown, O.—Council has passed resolution for the paving of Emerson place, Wood and Walnut streets and Truesdale avenue; also sidewalks on Jackson avenue; the paving of Thornton avenue, Fruit street and Bissell avenue is being considered.

Youngstown, O.—Council has passed resolutions providing for the paving of portions of South Champion street and Orchard place.

Youngstown, O.—Trustees of Coltsville Township and officers of the city are planning elaborate improvements for roads in the vicinity of East End Park; Early road is to be paved and made a boulevard; brick will be used for the pavement and it will extend from stop 18 on the Sharon line to Oak street; Shehy street and Hilmrod avenue are to be paved by the city to Oak street.

Enid, Okla.—City will pave Randolph avenue with vitrified paving block on 6-inch concrete base.—E. R. Lee, City Clerk.

Lehigh, Okla.—Bids will be received April 15 for the purchase of \$10,000 bonds to be used for concrete culverts and macadamizing streets with slack and crude oil.—Engineer Brown, Coal Gate, Okla.; John Rogers, City Clerk.

Ashley, Pa.—Council is considering an ordinance authorizing the macadamizing of a road from Main to Prospect street.

Athens, Pa.—The Street Committee will purchase 3,000 bricks for repair work.

Butler, Pa.—Council is considering the paving of East Pearl, East Walnut, North Washington and Chestnut streets.

Chester, Pa.—Property owners are considering the paving of the west side of Crosby street.

Chester, Pa.—Select Council is considering a bill increasing the city's indebtedness by \$600,000 for the general improvement of the highways; the extension and reconstruction of sewer system and other improvements.

Connellsville, Pa.—State road will be built from this city to Scottdale; distance, about seven miles; contract will be awarded late in the spring.—J. W. Hunter, State Highway Commissioner.

Gallitzen, Pa.—Council is considering the paving of Main street.

Green Ridge, Pa.—City will pave Columbia, Richmond, Grandview, Fisk and Parker streets, Boulevard and Olyphant avenue.

Harrisburg, Pa.—A Commission of three engineers and road builders, to be appointed by the Governor without delay, and to have entire charge of the planning and construction of the Stuart Main State Highway, is the project being considered by the Senate Committee on Public Roads.

Harrisburg, Pa.—The Ambler bill for the construction of a great highway across the State from Philadelphia to Pittsburg, through Harrisburg, recommended by Gov-

ernor Stuart, has been passed finally in the House.

Harrisburg, Pa.—State Highway Department is preparing plans for paving Carlisle pike, from Susquehanna River to Rossmoyne street, Lemoyne.—J. W. Hunter, Commissioner.

Johnstown, Pa.—President Jones, of Common Council, has recommended the improvement of streets in the outlying districts.

Pittsburg, Pa.—City is considering the removal of the "Hump," an impediment to the uptown commercial district; plans are being prepared by City Engineers.—W. H. Magee, Mayor.

Pittston, Pa.—Mayor Gillespie has recommended the improvement of North Main street from Pasouaye street to the city line.

Scranton, Pa.—Council has passed bills for paving River and Buck streets, Washington and Clay avenues; also for sidewalks on Warren and Fairfield streets, Cedar, Everett, Van Buren and Grant avenues.

Williamsport, Pa.—City Engineer J. F. Fisher has recommended the improvement of the following streets: North, cost \$560; Edwin, \$560; Court, \$550; Government place, \$125; State, \$275; Grace, \$210; Fifth avenue, \$225; Maple place, \$80; East and Church.

Branchville, S. C.—Town Council is making arrangements to pave the sidewalk on both sides of Main street.

Columbia, S. C.—Council has decided to improve "Robertson Parkway," from Laurel street to Elmwood avenue in accordance with the plans of Kelsey & Guild, architects; about \$5,000 will be expended.

Blountville, Tenn.—County Court has voted to make an additional \$200,000 good roads bond issue, the proceeds to be devoted to extending pike construction.—J. H. Caldwell, Chairman Construction Committee.

Clarksville, Tenn.—Montgomery County Court will expend \$500 in putting the Russellville turnpike in good condition.

Cleveland, Tenn.—Bradley County Court has authorized a \$500 expenditure for curbing around the County Court House.

Harris, Tenn.—City has sold \$40,000 bonds; proceeds will be used for the improvement of the streets and water and light plant and public schools.

Knoxville, Tenn.—County Court will ask Legislature to issue \$500,000 bonds for good roads.

Knoxville, Tenn.—Bids will soon be received for the improvement, paving, etc., of between 75,000 and 100,000 square yards of streets; any material may be presented by the bidder with the approval of the City Engineer.—S. D. Newton, City Engineer.

Madisonville, Tenn.—An election will be held on September on \$100,000 bonds for laying out and grading of some of the leading roads of the county.

McMinnville, Tenn.—Warren County Court has authorized the issuance of \$150,000 road bonds.

Memphis, Tenn.—City is considering paving of Porter street, Mississippi boulevard, Alston avenue and Walnut street; total cost, \$453,482.07.—James H. Malone, Mayor.

Memphis, Tenn.—Council is considering the following ordinances for street improvements: On McLemore, Alston and Reyburn avenues, Walnut and Porter streets and Mississippi boulevard, about 93,126 square yards vitrified brick will be needed; Lauderdale street, about 18,500 square yards sheet asphalt on concrete, and Polk and Beale avenues, about 17,254 square yards of concrete.—J. H. Weatherford, City Engineer.

Winchester, Tenn.—Money has been subscribed to build a spacious boulevard, two miles long, between Decherd and the city.—Hon. J. L. Littleton and J. L. Hays, Construction Committee.

Boston, Tex.—Bowie County citizens have voted \$250,000 bonds for road improvement.

Brownwood, Tex.—Brown County citizens will vote May 8 on \$100,000 bonds for macadamizing roads.

Dallas, Tex.—The Board of Commissioners has ordered the improvement of East Side avenue and Cedar Springs; bids will be received on brick, bitulithic and asphalt material.

Georgetown, Tex.—The good roads campaign now on in Williamson County will cause the expenditure of about \$100,000 in the building of macadam roads this year.

McKinney, Tex.—Citizens are considering an election on bonds for a system of first-class county roads.

Paris, Tex.—City will soon award additional street paving contracts, mainly bitulithic paving, with one street laid with Bois D'arc blocks on 5-inch concrete foundation.—Ed. H. McCulston, Mayor.

Texarkana, Tex.—Citizens have voted \$250,000 bonds for the construction of roads in Texarkana and suburbs.

Emporia, Va.—Greenville County citizens are considering an election on \$80,000 road bonds.

Norfolk, Va.—Council has adopted an or-

dinance appropriating \$1,200 for improvements to Raleigh avenue.

Norfolk, Va.—The Street Committee has recommended the purchase of an Iroquois roller; cost, \$2,375.

Richmond, Va.—Bids will be received by E. E. Davis, Superintendent City Water Works, April 14, for laying and relaying granite or cobblestone paving, cutting and refilling pipe trenches and relaying over pipe trenches.

Winchester, Va.—The 100 miles of roadway between Winchester and Staunton, owned by the Valley Turnpike Company, is to undergo a thorough overhauling, beginning in about a week, according to a statement of President H. F. Byrd. The good roads movement is spreading to all sections of the State, and during the past week or two a number of elections have been held, at which counties were authorized to issue bonds for road improvement, and in that way secure additional aid from the State.

Montpelier, Vt.—State will expend \$75,000 for road building.—Charles W. Gates, State Road Commissioner.

Aberdeen, Wash.—County will build a road from Bear Gulch to the Aberdeen Gardens; cost, \$15,000.

Seattle, Wash.—The Street Committee of Council has recommended a bill providing for the improvement of Market street in Ballard; citizens are urging the paving of East Pike street before the opening of the fair.

Tacoma, Wash.—Council is considering the improvement of Birmingham street, grading of alley between North Twenty-sixth street and Tacoma avenue and opening North Oakes street.

Walla Walla, Wash.—Bids will be received April 15 for paving numerous streets.

Janesville, Wis.—Council has ordered brick crosswalks built on several streets.

Racine, Wis.—Council has instructed the Board of Public Works to improve Eleventh street, Racine street and Eighth street.—P. H. Connolly, City Engineer.

Racine, Wis.—Special Committee has recommended that out of the pavement and improvement funds 14 streets be paved, at a total cost of \$32,356.79.

BIDS RECEIVED AND CONTRACTS AWARDED

Birmingham, Ala.—The Barcliff Construction Company, city, has been awarded contract for construction of 5 3-10 miles of macadam road between Mulga and Elbow for \$6,054.

Ensley, Ala.—City has awarded contract to Marlark & Company, city, to pave Avenue F with tar pavement.

Little Rock, Ark.—The Memphis Asphalt & Paving Company, Memphis, Tenn., has been awarded contract for 20,000 yards of sheet asphalt paving on concrete base in Louisiana street improvement district; total cost estimated at \$55,000.—E. A. Kingsley, Superintendent of Public Works.

Little Rock, Ark.—Following are the details of the bid of the Memphis Asphalt & Paving Company, of Memphis, Tenn., which secured the contract for asphalt paving as stated just above: 16,200 square yards asphalt, including 5-inch concrete base, \$2.20; 10,000 feet stone curb, 45 cents; 10,000 cubic yards grading, 45 cents; concrete masonry, \$7.50 per cubic yard; 2,800 square yards brick gutters, \$2.24.

San Francisco, Cal.—The Board of Public Works, March 26, awarded contract to Flinn & Treacy, 1278 Market street, for paving Polk street, between Post and Sacramento streets, at \$17,000.—Marsden Manson, City Engineer.

Washington, D. C.—Bids were opened, April 10, for grading Sixteenth street extended between Webster and Kennedy streets. George B. Mullin made the lowest bid, offering to do the work for 27½ cents a cubic yard. Other bids were as follows: George Hyman, 30 cents; Parker & Voigt, 46½ cents; James W. Beam, 29 cents; E. G. Gummel, 35 cents; L. M. Johnston, 74 cents; Fisher & Cordoza, 39 cents; about \$3,000 will be expended.

Savannah, Ga.—The Neal-Blum Company has been awarded contract at the following prices for furnishing the county with crushed granite: 650 tons 1½-inch at \$1.76 a ton, and 500 tons of ¾-inch granite at \$1.82 a ton.

Bids were received as follows March 29 for supplying 22,000 lineal feet of straight curbing, 2,000 feet of curved curbing, 35,000 square yards of vitrified brick and 65,000 square yards of asphalt block, a brick, b asphalt block: Gadsden Construction Company, of Savannah, on various kinds of brick, three bids, \$1.03 to \$1.47 per square yard; Georgia Vitrified Brick & Clay Company, of Augusta, a 95 cents; Graves Shale Paving Brick Company, of Birmingham, Ala., a \$1.12; Neal-Blum Company, of Savannah, a \$1.134; Hastings Pavement Company, of New York, N. Y., b \$1.34½, and Barber Asphalt Paving Company, of Phila-

delphia, Pa., b \$1,159; the General Building Supply Company, of Savannah, awarded contract straight granite curbing 22½ cents and curved curb 26 cents.

Bloomington, Ill.—The Board of Local Improvement has awarded contract for 14,504 square yards of brick paving on East Clay street to I. D. Lain for about \$30,000.

Quincy, Ill.—Contract for paving Kentucky street has been awarded to Elff & Snebbing, city, for \$14,375.—J. H. Best, Mayor.

Martinsville, Ind.—Council April 5 let the contract to Nolan & Slattery, of Crawfordsville, for the paving of North Jefferson street from Morgan to Cunningham street with brick, and for the construction of cement walk, the roadway to be built at \$1.16 a square yard; the same firm also received the contract for the improvement of West Pike street. George T. Miller, of Lebanon, received the contract for the construction of cement walks at 8 4-9 cents a square foot.

Rushville, Ind.—The Board of County Commissioners let the contract, April 6, for building the new macadam free pike in Anderson Township to Reed & Thompson, of Greensburg; the successful firm's bid was \$47,400; the new pike covers twelve miles.

Vincennes, Ind.—County Commissioners have let contract to Louis Philippe for building gravel road petitioned for by Alex. Boyer at \$2,900.

Boone, Ia.—Council has awarded contract for 26,920 square yards of paving, 5,954 lineal feet of new curb and 1,903 lineal feet of old curb to A. J. Garry, of Denison, for \$43,797.

Iowa City, Ia.—Lehman & Bradley have secured the contract for paving with brick Court street at \$7,523.

Sioux City, Ia.—M. L. Flinn, of Sioux City, has secured the contract for 55,000 square yards brick block pavement on 4-inch Portland concrete base, at \$2.08 per square yard.

Atchison, Kan.—All bids opened on April 5 for paving Spring street with brick, about

6,222 square yards, have been rejected; being too high, and new bids will be received; the lowest bid was that of the Atchison Paving Brick Company at \$19,671.—Fred Giddings, City Engineer.

Topeka, Kan.—The resolution to award the Kaw Paving Company the asphaltic concrete paving on College avenue and Mulvane street has passed Council in the right form, and this company is now officially under the harness; the former resolutions were appealed.

Lexington, Ky.—Council has accepted bid of Buford A. Graves for the construction of concrete sidewalks, curbing and guttering on certain streets.

Louisville, Ky.—The Board of Public Works, April 5, opened proposals for thirty pieces of sidewalk construction, estimated to cost \$17,000, the contractors who bid being George Gosnell, R. L. Figg, Henry Bickel and other outside contractors, among them L. W. Hancock, of St. Louis; the prices ranged from 98 cents to \$1.40 per square yard on granitoid, and from 60 to 70 cents per square yard on brick. The awards will be made later to the lowest bidders, when the letting sheet is figured out.

Opelousas, La.—Huston & Cunningham, engineers, 725 Malson Blanche Building, New Orleans, La., contractors for constructing about 35,000 square feet of cement sidewalks and 7,000 lineal feet brick curbing, have sublet contract to J. E. Allen, of Opelousas; estimated cost, \$10,000.—M. Halphen, Mayor.

Frederick, Md.—Sands & Key, Norfolk, Va., are lowest bidders for street improvement work; work includes 10,360 square feet vitrified brick paving, 4,913 lineal feet granite curbing, and 1,370 feet 24-inch terra cotta sewer pipe.

Boston, Mass.—John T. Martin and Pierce Condon, Watertown, N. Y., have been awarded a contract for grading, surfacing and other work through the United States Arsenal Charles River Reservation, Watertown, Mass. The items of the successful bid were: For 3,500 cubic yards earth grad-

ing, 25 cents; 1,150 feet 10-inch pipe, 25 cents; 100 feet 24-inch pipe, \$1; 20 cubic yards Portland cement concrete, \$7; 17 concrete catch basins, \$27; 45 lineal feet straight edgestones, 90 cents; 175 lineal feet curved edgestones, \$1.10; 500 cubic yards loam surfacing, 25 cents; 3,000 cubic yards loam furnished by contractor, 90 cents; 14,000 square yards roadway surfacing, 50 cents; 5,200 square yards walk surfacing, 18 cents; 6,900 lineal feet iron fence, \$2.50. Totals of all bids were: B. Penni & Company, South Framingham, \$23,429.75; Peter F. Connolly, Jamaica Plain, \$19,689.50; Richmond F. Hudson, Melrose, \$18,596.25; Luigi C. Carbia, Boston, \$18,424.50; H. M. McBride & Company, Brighton, \$18,288.10; Rome Contracting Company, Brighton, \$17,765; Frank Williams & Company, Boston, \$17,296; Charles G. Crab, Boston, \$17,188.75; T. H. Gill Company, Somerville, \$16,743.75; John T. Martin & Pierce Condon, Watertown, \$14,550.50.—John R. Robbin, Engineer, Charles River Basin Commission.

Jackson, Minn.—Anderson & Haverberg have been awarded contract for setting 920 lineal feet new curb at 30 cents and laying 8,700 square feet 1:2½ cement sidewalks on 4-inch 1:4 foundation at 10½ cents. Other bidders were as follows, figure for curbing being given first and then for sidewalks: A. A. Gruhlka, 38 cents, 10½ cents; Lockner Brothers, 60 cents, 11 cents; Wm. Talbot, 45 cents, 11 cents; J. H. Mayer, 32 cents, 10½ cents.—P. D. McKellar, Auditor.

Summit, N. J.—The contract for supplying this city with 4,000 tons of crushed stone, for road use, has been awarded by Council to the Larson Traprock Company, of Springfield. This company's prices for the stone, delivered in any part of the city, were: For ½-inch size, \$1.25; 1-inch, \$1.20; 1½-inch, \$1.15; 2-inch, \$1.05. The Commonwealth Quarry Company, of this city, the only other bidder, submitted the following prices: ½-inch size, \$1.35; 1-inch, \$1.35; 1½-inch, \$1.25, and 2-inch, \$1.15. The successful bidder was required to furnish a bond in the amount of \$1,000.

Kirkville, Mo.—Carl P. Werner, Sedalia, has secured contract to pave several streets for about \$42,000.

Lincoln, Neb.—The low bidders, as stated last week, secured paving contracts as follows: National Construction Company, of Omaha, for 14,534 square yards brick paving at \$1.88 per square yard, using Pittsburg blocks; M. Ford, of Cedar Rapids, Ia., for repaving 4,205 square yards with brick.

Bloomfield, N. J.—Contracts for improvements were awarded as follows: Jerome place telfordizing, 75 cents per square yard, Richard J. Maxwell; Walnut street telfordizing, 75 cents per square yard, and Olive street telfordizing, 62 cents per square yard, Miele & Bruno; State street sewer, \$663.30, Ralph Antolino; Broad street sewer, \$554.50, Donato Fusco; Jerome place, storm drain, \$155.40, James T. Boylan.

Irrington, N. J.—Contracts for the grading of Florence avenue, from Tiffany place to Clinton avenue, west, and the flagging and reflagging of Colt street, from Clinton to Lyon avenues, were awarded to the Miele & Bruno Company and the A. L. Clark Stone Company, respectively.

Long Branch, N. J.—Council has received the following bids for the furnishing of gravel for repairing the public streets during the current year: Sea Coast Gravel Company, \$1.15 per cubic yard, f. o. b. cars, Long Branch; The Monmouth Gravel Company, \$1.12 per cubic yard, f. o. b. cars, N. Y. & L. B. R. R.; John T. Hopping, 90 cents per cubic yard, f. o. b. cars, Long Branch; Edward F. Ford, 90 cents per cubic yard, f. o. b. cars, Long Branch; C. B. Thompson 87½ cents per cubic yard, f. o. b. cars, Long Branch; the Thompson bid, was low, was withdrawn after investigation by city officials as to facilities for fulfilling the contract.

Newark, N. J.—Contracts for grading, curbing and flagging were awarded as follows: Woodside avenue, Philip and Peter Jannarone, \$2,462; Hedden street, Atlantic Contracting & Construction Company, \$1,890; Chadwick avenue, William Ballard, \$2,699; Delancy street, Atlantic Contracting & Construction Company, \$11,367; Seymour avenue, A. F. Gerber, \$2,029; Grove street, North Sixth street and North Seventh street, Atlantic Contracting & Construction Company, \$6,401, \$9,686 and \$11,439, respectively. To the J. F. Shanley Company was given the contract for the paving of Fillmore street, for \$5,922, and of Nicholson street for \$2,870. Brick is to be used in the paving of both thoroughfares.

Perth Amboy, N. J.—Council received four bids for grading and curbing Paterson street, between Madison and Brighton avenues. The bids were: Graham & McKeon, 34 cents per cubic yard; new curb, 64 cents per lineal foot; Peter Hanson, 30 cents for excavation, 59 cents for curbing; Martin Hansen, 35 cents for excavation, 63 cents for curbing; Liddle & Pfeiffer, 30 cents for excavation and 60 cents for curb. The Paterson street contract was later awarded

Newburgh, N. Y.—Nine companies submitted bids for paving with granite blocks, on Portland cement foundation, and Nolan & Hornung, of West Hoboken, are low on both large and small blocks, and the totals bring about \$33,260 and \$34,500 respectively; they also submitted a bid of \$2.70 on Palisade trap rock as a supplementary bid. Considerable leeway is given the contractors in the size of the blocks. The large blocks run from 8 to 12 inches in length, from 3½ to 5 inches in width and 7 to 8 inches in depth. The maximum blocks weigh about 45 pounds. The small blocks vary from 8 to 12 inches in length, 3 to 4 inches in width and 4 to 5 inches in depth.

Following is the table of the bids:

NAMES OF BIDDERS	Large Blocks		Small Blocks		Con. crete		Bridge Stone		Curb New		Curb Old		Man. Catch		Inlets	
	sq. yd.	sq. yd.	sq. yd.	sq. yd.	cu. yd.	cu. yd.	lin. ft.	lin. ft.	lin. ft.	lin. ft.	lin. ft.	lin. ft.	holes	Basins		
Mulderly Bros., Albany.....	\$3.81	\$3.60	\$6.00	\$1.20	\$0.90	\$0.30	\$50	\$80	\$62							
M. J. Dwyer, Newburgh.....	3.55	3.45	6.00	.65	.67	.20	100	160	100							
*F. V. Rice, Kingston.....	3.60	3.75	6.00	1.00	.93	.33	125	160	100							
Bonacci & Vincelli Con. Co., Brooklyn.....	3.60	3.50	6.00	1.00	1.00	.50	50	100	100							
Jas. E. Martin, Poughkeepsie.....	3.57	3.65	5.00	1.00	1.15	.75	100	100	100							
Samuel Beskin, Fishkill.....	3.43	3.53	6.00	.50	.60	.30	60	70	40							
Nolan & Hornung Con. Co., West Hoboken, N. J.....	3.15	3.00	7.00	1.00	1.00	.60	100	75	100							
Frank H. Cowin Co., Boston, Mass.....	3.75	3.62	6.00	.80	.75	.50	80	80	70							
Hassam Paving Co., Worcester, Mass.....	3.95	3.28	6.00	.90	.80	.35	60	50	40							

*Presented second bid for stone from another quarry. \$3.67 for large block and \$3.50 any small block.

St. Bernard, O.—The following bids were received on March 26 by George Schroeder, Village Clerk, for grading, macadamizing and setting concrete curb and gutters on two streets and for constructing sewers in two streets:

BIDDERS	Kemper Avenue.	Jackson Avenue.	Kemper Avenue, Sewer.	Jackson Avenue, Sewer.
M. Sullivan & Sons, Cincinnati.....	\$9,385.00			
O. E. Robinson & Son, Cincinnati.....	9,974.50	\$7,129.50	\$385.00	\$433.00
B. Nicholas, Cincinnati.....	10,130.00	8,471.00	363.00	393.50
Kirchner Construction Co., Cincinnati.....	10,150.00	8,132.00	380.00	381.50
John Fincke, Cincinnati.....	10,182.50	5,408.50	428.00	462.00
John Ruebel & Bro., Cincinnati.....	10,231.00	9,685.00	521.50	531.25
Allen Kisinger, Kennedy.....	10,342.50		374.00	445.00
P. N. Lewin, Covington, Ky.....	10,543.50	6,288.50	375.80	423.50
Aug. J. Henkel, Cincinnati.....	10,625.00	6,787.50		
E. B. Lawyer, St. Bernard.....	10,765.00	7,833.50	530.50	532.75
Scott & Walker, Cincinnati.....	10,781.50	5,567.50	373.20	409.80
Louis Drach Construction Co., Cincinnati.....	10,960.00	6,286.00	412.00	485.00
O'Brien & Anderson, Norwood.....	11,275.00	6,416.50	405.00	435.00
Sperry & Ritter.....	11,627.50	7,956.50	524.00	525.50

Racine, Wis.—Bids were received by the Board of Public Works, P. H. Connolly, Chairman, for paving Main street, from Sixth to Fourteenth street, with Trinidad pitch lake asphalt or any natural deposit equally good for paving purposes, and the lowest bid on Trinidad, which the Board considers the best for paving purposes, was submitted by the White Construction Company, of Milwaukee, and contract was awarded firm by Council, notwithstanding that the White Company submitted a lower figure on Buena Vista asphalt and two other bids were lower on Obispo asphalt.

BIDDERS	Asphalt	Sq. Yd. Paving		Lin. Ft. Gutter		Lin. Ft. Curb		Concret-ing	Total
		Sq. Yd.	Lin. Ft.	Sq. Yd.	Lin. Ft.	Sq. Yd.	Lin. Ft.		
The Peters Bros. Paving Co.....	Obispo.....	\$1.79	\$0.30	\$0.20	\$0.75	\$38,240.84			
P. McDonnell.....	Trinidad.....	1.80	.35	.20	7.00	38,851.55			
J. Hanreddy.....	Obispo.....	1.75	.40	.20	.90	38,265.50			
M. H. McGovern.....	Trinidad.....	1.89	.35	.18	.75	40,639.69			
White Construction Co.....	Buena Vista	1.71	.25	.08	4.50	36,191.91			
	Trinidad.....	1.83	.25	.08	.75	38,585.43			
Western Improvement Co.....	Trinidad.....	1.92	.34	.15	none	41,145.32			
Standard Paving Co.....	Trinidad.....	1.89	.30	.35	3.50	40,287.94			
	Buena Vista	1.84	.30	.35	3.50	39,290.64			
Budger Construction Co.....	Trinidad.....	1.85	.35	.10	.65	39,813.85			

to Liddle & Pfeiffer, whose total bid amounted to \$600; Graham & McKeon's total was \$656; Martin Hansen's, \$658, and P. Hanson's, \$594. The latter's check was not certified and his bid was, on motion, rejected.

Rio Grande, N. J.—The contract for building the County Road from the Mainshore Road at Rio Grande to Holly Beach City, Cape May County, has been awarded to A. H. Lupton, of Bridgeton, for \$56,104.

Woodbridge, N. J.—M. Living Demarest, of Sewaren, has presented a bid for furnishing stone throughout the township for the year, costing \$1.35 per car, and the bid being the only one his bid was accepted.

Albany, N. Y.—Mulder Bros. have been awarded contract by the city, at \$6,515, for improving Orange street.—Walter Melius, City Engineer.

Buffalo, N. Y.—The German Rock, Asphalt & Cement Company has secured contract to repair all asphalt streets to July 1, 1909, for 95 cents per square yard.

New Brighton (S. I.), N. Y.—Bids were received as follows, April 6, by George Cromwell, President Borough of Richmond, for (a) furnishing all the labor and materials required for regulating and repaving with vitrified brick pavement on a concrete foundation the gutters of Lafayette avenue, Sharp avenue, Elm street and Maple avenue, from Richmond Terrace to Harrison avenue, and also the gutters of Townsend avenue, from a point 290 feet west of Bay street to Centre street; (b) furnishing all labor and materials required for regulating and repaving with granite block pavement on a concrete foundation the south side of Richmond terrace from Morning Star road to Van Name avenue, together with all work incidental thereto; (c) Prospect street, from Burger avenue to Columbia street, Britton street, from Broadway to end of street, South street, from Burger avenue to Broadway, Van Pelt avenue, from Richmond terrace to a point about 175 feet south of the Staten Island Rapid Transit Railroad crossing and Van Name avenue, from Richmond terrace to the Staten Island Transit Railroad crossing; (a) Segretto & Benacci, \$17,669; Wm. J. Quinlan, \$17,945; James B. Sullivan, \$20,869; John E. Donovan, \$18,228; Joseph Johnson's Sons, \$18,692; (b) Segretto & Benacci, \$10,704; John E. Donovan, 25 Morning Star road, \$9,934; Joseph Johnson's Sons, \$10,309; (c) Segretto & Benacci, \$17,060; John E. Donovan, \$20,607; Joseph Johnson's Sons, \$19,156.

New York, N. Y.—Bids were received as follows, on April 6, by Louis F. Haffen, President Boro of the Bronx, for regulating, grading, setting curb stones, flagging and sidewalks, laying crosswalks, building approaches and placing fences in Edenwald avenue (Jefferson avenue) between East 233d street and the boundary line between New York and Mount Vernon; William F. Burnhardt, Williamsbridge, the Bronx, \$34,876; Voorhees & Sullivan, \$44,777; P. J. Duffy, \$42,693; Wakefield Construction Company, \$39,280; Frank Nordone, \$45,480; W. F. Murray, \$54,442.

Syracuse, N. Y.—Under its threat to install a plant and perform the city's asphalt street repairs through the Department of Public Works, the Board of Contract and Supply, Apr. 5, succeeded in turning the work over to a contractor at the lowest price in the city's history. The award was made to the Warner-Quinlan Asphalt Company upon a basis of \$1.20 a square yard. The price was based upon an estimated quantity of 18,000 square yards to be repaired, making the total of the bid \$21,600, to which was added 500 square yards of new work to be performed in addition to some incidental construction, making the lump sum of the bid \$23,210. In view of the low price offered by the company, Commissioner of Public Works Frank M. Westcott was directed to increase the number of square yards of repair so as to consume the entire \$30,000 appropriation provided by the 1909 tax budget. Under the contract the company will be required to perform as much additional repair as the Commissioner may require. The contract price, as

compared with the \$1.32 rate that was paid this same company last year, effects a saving to the city of about \$2,700 over last year and is lower by \$1,600 than the \$1.29 rate that was bid by it a week previous, when all proposals were rejected. The first bidding took place a month ago, when Contractor John Young offered a bid of \$1.10 and then was obliged to forfeit his \$200 guarantee check because he was unable to supply a suitable bond. The only competitor the Warner-Quinlan Asphalt Company had, Apr. 5, was the Central City Paving Company, which offered the same bid put in the week previous, \$1.30 for the repair and \$2.25 for the new work, the total bid being \$25,005.

Troy, N. Y.—Proposals for furnishing broken stone to be used in continuing the macadam pavement on Fifth avenue, North End, were received; Charles B. Buck offered to furnish trap stone at \$2.65 per cubic yard and screenings for \$2.45 per yard. The Massachusetts Broken Stone Company agreed to furnish both kinds of stone at \$2.25 per yard. The bids were sent to the Engineer for examination.

Durham, N. C.—The Aldermen have awarded the contract for the grading of the market site, so as to begin the foundation work, and also for the grading of Ella Place, a new street from Chapel Hill to Watkins, to J. E. Dickson and Company, grading contractors.

Graham, N. C.—The Road Commission of Alamance County has awarded contract for building 46 miles of macadam road to R. L. Peters, of Knoxville, Tenn., for \$190,000.—R. L. Holt, Chairman.

Bowling Green, O.—Bids were opened March 29 by F. W. Toan, County Auditor, for grading, draining and macadamizing the McDowell-Wilson road, about 2 miles in length, and contract has been awarded to Geo. E. Mercer, city.

Elyria, O.—Sol Mendelson has been awarded contract, at about \$110,000, for constructing brick pavement on Park avenue.

Ironton, O.—The bids for the street crossings were opened and read as follows: Francisco, 8 cents for brick and 13 cents for cement; Henninger, 9 1/4 cents and 17 cents; Dressel, 15 cents for cement; Black, 10 1/2 cents for brick, and the Ironton Construction Company, 10 and 12 cents. Mr. Francisco was given the contract.

Ravenna, O.—Bids were received, March 22, for paving West Main St.; lowest bidders were E. E. Morgan and V. K. Williams, city, and the contract was awarded to them at \$23,227.

Portland, Ore.—After advertising for bids for filling East Third street between East Oak street and Hawthorne avenue seven different times, the City Executive Board, April 2, awarded the contract for the proposed improvement to the Pacific Bridge Company for \$72,000, which is \$300 above the estimate of the City Engineer. Mayor Lane has been averse to awarding the contract to the Pacific Bridge Company and has repeatedly promised the members of the Board that others would bid on the job if they readvertised. Other competitors for the contract failed to make their appearance, and finally, tiring of the continuous delay, the Street Committee of the Executive Board during the absence of the Mayor recommended that the contract be let.

Butler, Pa.—The bids on paving were much lower than when the same kind of work was done on a large scale a couple of years ago, the prices this year being from 30 to 50 per cent. lower than for the same class of work in the past. The bids for the paving of Oak street, Lincoln avenue and Second street showed that the contractors were bidding close on the work and it will take the tabulation to determine which contractor is the lowest.

On Oak street Mack brick with a 30-inch cement curb was adopted. The bids for this street are as follows: N. J. Boyer, brick \$1.35 yard; curbing, 57 cents foot; pitch filling, 12 cents; excavating, 37 cents; John Schaffner, brick, \$1.31; curbing, 63 and 73 cents; pitching, 10 cents; excavating, 30 cents; Tony Morelli, brick, \$1.35;

curbing, 62 cents; pitching, 14 cents; excavating, 36 cents. There were four other bidders on the contract, but they were considerably higher than the above figures.

For the paving of Lincoln avenue from Center to the Plate Glass Works, brick and Butler & DuBois block were adopted, with sandstone curb, the close contractors bidding as follows: Morelli, brick, \$1.18; curb, 51 cents; pitching, 13 cents; excavating, 33 cents; Burns Brothers, brick, \$1.14; curb, 55 cents; pitching, 13 cents; excavating, 40 cents; Schaffner, brick, \$1.26; curb, 48 cents; pitching, 13 cents; excavating, 30 cents; Boyer, brick, \$1.17; curb, 47 cents; pitching, 12 cents; excavating, 25 cents; F. M. Harper, brick, \$1.19; curb, 50 cents; pitching, 14 cents; excavating, 14 cents. In the bids for the paving of this street several contractors submitted prices on the paving block of the Butler Brick & Tile Company, the price ranging from 99 cents to \$1.14 per square yard.

For Second street, DuBois & Butler block, with stone curb, was selected, the close bidders being as follows: Boyer, brick, \$1.22; curb, 52 cents; pitch, 12 cents; the price for the excavating on this bid was left out; Schaffner, brick, \$1.24; curb, 50 cents; pitch, 12 cents; excavating, 29 cents; Morelli, brick, \$1.29; curb, 54 cents; pitch, 13 cents; excavating, 40 cents.

Harrisburg, Pa.—The Central Construction & Supply Company submitted low bid to the State Highway Commission for paving and curbing Thompson street, at \$1.88 per square yard for asphalt, 87 cents for granite curbing and 65 cents for granolithic.

Harrisburg, Pa.—Councils have awarded contracts for the paving of sixteen sections of streets; the contract for the paving of Basin alley, from James to Sixth streets, was awarded to C. P. Walter, who was lowest of seven bidders, with his solidly bituminous pavement. The following awards were also made, upon the recommendation of Highway Commissioner W. W. Caldwell: To the Central Construction and Supply Company, the lowest bidder—Seventeenth street, Walnut to State streets, maltha sheet asphalt, \$1.76 per square yard; Elm street, from Sixteenth to Eighteenth streets, \$1.76; Fifth street, Market street to the Pennsylvania Railroad, \$1.76; Shanklin street, South to State streets, \$1.88. Green street, Reilly to Maclay streets, \$1.75; Dauphin, Sixth to Seventeenth streets, \$1.75; Eighteenth, Market to Walnut streets, \$1.80; Zarker, Sixteenth to Seventeenth streets, \$1.76; Sixteenth, Briggs to Forster streets, \$1.86; Reese, Crescent to Fifteenth, \$1.87; Nectarine, Kittatinny to Swatara streets, \$1.87; resurfacing Walnut, Third to Filbert streets, \$1.75; Thompson, Thirteenth to Fourteenth streets, \$1.94.

Stucker Brothers' Construction Company underbid the Central Company on the Eighteenth and the resurfacing of Walnut street jobs, but the Highway Commissioner stated in his communication that the asphalt this company bid on, Texas asphalt, had not been used until last fall, and that while it might prove to be a first rate paving material, the time had been too short to show what the results would be. The maltha asphalt used by the Central Company has been in use for some years.

Hazleton, Pa.—John H. Leffler and Jacob Jacoby were bidders for new street crossings and cross gutters, and the former being the lowest was awarded the contract.

On the furnishing of tools for the Highway Department the Hazleton Machinery and Supply Company bid \$320 and Charles Rice bid \$293.58; the latter was awarded the contract.

Oil City, Pa.—Jas. McNamara, Dunkirk, N. Y., has secured contract for paving with brick a portion of West First street, requiring 21,900 square yards paving, 8,950 lineal feet cement or stone curbing and 25,600 cubic yards excavation, for \$55,000.

Wilkes-Barre, Pa.—The Warner-Quinlan Company has been awarded contract for 4,400 square yards 2-inch asphalt on 6-inch concrete and 1-inch binder, at \$2.35, including 12-inch excavation. Fitzpatrick & McConville have been awarded contract

Luzerne, Pa.—Bids received by Luzerne Borough, R. J. Blair, Secretary, for paving about 1,750 linear feet of Main street, 32 feet wide, on March 30, with vitrified brick paving block on a 4-inch concrete base, and contract was awarded, April 2, to Rosser Engineering and Construction Company, and brick selected was Standard Brick & Tile Company brick at \$1.91 per square yard.

BIDDERS	American Porter	National Porter	Clearfield Clay Work- ing Co.	Clearfield Brick Manu- facturing Co.	Standard Brick & Tile Co.	Pennsylvania Clay	Standard Fire Brick Co.	Shamut	Clymer	Mack	Pittsburg & Buffalo	Patterson Clearfield	Concrete, Straight Curb, per foot	Concrete, Circular Curb, per foot	Concrete, Straight Curb, 30 in., per foot	Stone Cross Curb, per foot	Connections to Two Catch Basins	Extra Con- crete, per Cubic Yard	Work to be Com- pleted
G. B. Coon, Wilkes-Barre, Pa.	\$2.09	\$2.07	\$2.07	\$2.05	\$2.06	\$2.04	\$2.07	.....	\$1.95	.....	.....	\$2.05	\$0.69	\$1.20	\$0.76	\$0.45	\$40.00	\$5.00	60 days
Rosser Engineering & Construc- tion Co., Kingston, Pa.	1.98	1.96	1.95	1.94	1.91	.....	1.98	.....	.....	.....	.....	.....	.65	1.25	.90	.50	10.00	5.00	90 days
R. M. Rosser, Kingston, Pa.	2.07	2.05	2.06	.....	2.04	.....	2.06	.....	.....	.....	.....	.....	.67	1.75	.85	.48	80.00	6.00	90 days
McConville & Fitzpatrick, Pitts- ton, Pa.	2.16	2.14	2.14	2.11	2.09	.....	2.15	\$2.14	2.04	\$2.14	\$2.15	.....	.73	1.20	.86	.40	6.00	5.00	120 days

for 2,800 square yards brick on 6-inch concrete, 1:2:4 foundation and 2-inch cushion, at \$2.13, including 12-inch excavation. Frank Anstett has been awarded contract for setting 500 feet 18-inch new curb in concrete at 75 cents, and the Bown Quarry Company for resetting 1,100 feet old curb at 58 cents, and setting 300 feet new 24-inch curb in concrete at 90 cents.—B. K. Finch, City Engineer.

Galveston, Tex.—City has awarded contract to North American Dredging Co., San Francisco, Cal., for filling of streets between Forty-third and Forty-sixth streets and Avenues J and L, inclusive; work involves placing of 34,980 cubic yards of filling at 16½ cents per cubic yard, making a total of \$5,771.70.—V. E. Austin, Commissioner of Streets and Public Property.

Portsmouth, Va.—I. J. Smith & Company, of Richmond, has secured the contract to construct a macadam road from Berkley to Great Bridge for about \$50,000.

Fort Lawton, Wash.—Norman McKinnon has been awarded contract, at \$6,249, for the construction of a gravel road at Fort Lawton.

Hoquiam, Wash.—The lowest bid opened by City Council, March 24, for paving with brick portions of "I" and Eighth streets, is reported to have been submitted by F. Keasel & Company, of Tacoma, for about \$150,000.

Seattle, Wash.—The Board of Public Works has awarded contracts for paving as follows: Coast Concrete Company, Pacific block, Twentieth street with granite, \$15,274, and to J. H. Mendenhall for East Forty-second street, \$9,318.

Walla Walla, Wash.—Ordinance No. 1312, introduced in Council by the Warren Brothers' Paving Company, and authorizing the Mayor and Clerk to enter into a contract, has been given final passage; the measure provides for the appropriation of \$1.00 from the general fund as a consideration to bind the contract, and names a bond of \$25,000 for the faithful performance of the contract by the paving company.

Keyser, W. Va.—City has awarded contract to H. C. Brooks Company, Fairmont, for street paving; cost, \$25,000; Hammond Fire Brick Co., Fairmont, will furnish brick.

Philippi, W. Va.—Council has awarded the contract for about 4,500 cubic yards grading, 3,000 lineal feet stone curb, 3,000 lineal feet concrete curb and 10,000 square yards brick paving to C. H. Brooks, of Fairmont, for paving, and to L. A. Mullins, of Atlanta, Ga., for curb and gutter.

Sheboygan, Wis.—The following bids were received by the Board of Public Works for paving portions of North Water, North Thirteenth and North Twelfth streets, in all 14,360 square yards paving, 2,111 feet curb and gutter and 1,619 feet stone curbing: John Braun, \$1.65 per square yard; John O. Jones, of Racine, \$1.72 per square yard, and Otto Koehnig, of Milwaukee, \$2.45 per square yard.

Montreal, Que., Can.—The Montreal & Southern Counties Railway Company has awarded to Sicily Asphaltum Paving Company the contract for paving Grey Nun and Youville streets.

SEWERAGE

Birmingham, Ala.—Plans are being prepared for extension of storm sewers and branches; the main will be about three-fourths of a mile long and with branches will cost about \$100,000; contract will be let early in May.—Maury Nicholson, City Engineer.

Ensley, Ala.—Council has decided to call an election on \$65,000 bonds for sanitary sewers.—P. J. Rogers, President.

Mobile, Ala.—City is considering the installation of sewers in Oakdale.

Talladega, Ala.—Citizens will vote in the near future on \$20,000 bonds for extension of sewerage system and paving.

Phoenix, Ariz.—The Special Committee, B. A. Fowler, chairman, has recommended that the city employ an engineer to submit plans for a comprehensive sewer system of the unit type; cost, \$43,600.—L. G. Knipe, Consulting Engineer.

Eldorado, Ark.—City is considering the issuing of bonds for construction of sewer system.

Monticello, Ark.—Council has acted favorably on petition for a sewerage improvement district; six and two-thirds miles of main will be laid; cost, \$35,000.—J. J. McCloy, E. B. Wells and G. A. Knox, Committee.

Russellville, Ark.—City is considering the construction of a sewer system.

Los Banos, Cal.—City will expend \$30,000 for new sewers.

Oroville, Cal.—Citizens will vote on \$125,000 bonds for sewer purposes.

Pasadena, Cal.—Council is considering construction of sewers in Kirkwood, Morton and Sunset avenue, Pepper, Washington, Cedar and Dakota streets.

Willows, Cal.—Town Trustees have ac-

cepted plans and specifications for a sewer system.

Leadville, Col.—City has appropriated \$3,000 for sewer purposes.—H. C. Rose, Mayor.

Ellington, Conn.—Selectmen have petitioned for an appropriation of \$3,000 for laying sewer mains.

Hartford, Conn.—Citizens have voted \$200,000 bonds for the construction of the east side intercepting sewer and \$12,000 for Homestead avenue intercepting sewer.

Manchester, Conn.—The South Manchester Sewer Company has prepared plans for building a large surface water system for the purpose of eliminating dry brooks.

South Manchester, Conn.—Plans have been completed by Cheney Bros. for the construction of about 2½ miles of sewer mains; work will be started very soon; sewer, to connect with the trunk sewer, will extend from Main street through Center Springs woods.

South Jacksonville, Fla.—Citizens have defeated a \$5,000 bonds issue for sewer and water systems.

Macon, Ga.—Council is considering an ordinance calling an election on June 19, on \$100,000 bonds for sewers.

Toccoa, Ga.—J. B. McCrary & Co., Atlanta, Ga., will make surveys to ascertain cost of installing sewer system.—Dr. John Edge, Chairman of Committee.

Sandpoint, Idaho.—Citizens will vote about April 20 on installation of a sewer system; cost, \$30,000.

Maywood, Ill.—Village is considering ways and means of improving sewage conditions.—Chief Engineer Wisner, Sanitary Board, is interested.

St. Charles, Ill.—Council is considering the construction of a sewer from West Seventh to West Third streets.

Evansville, Ind.—The Board of Public Works has ordered the construction of a sewer along Jackson avenue.

Gary, Ind.—Town Board will advertise in about two weeks for laying a brick sewer extending on 13th avenue, a distance of three miles.—T. E. Knotts, President.

Greencastle, Ind.—Plans are about completed for a system of sewers.—Riggs & Sherman 613 Nasby Building, Toledo, O., Engineers.

Council Bluffs, Ia.—Street Commissioner T. F. Flood has recommended the installation of a sewer line on High street.

Muscatine, Ia.—Plans are being prepared by City Engineer J. J. Ryan for sewers on East Hill, Park and Cannon avenues, Magnolia, Sheridan and other streets.

Sioux City, Ia.—Council has ordered sanitary sewers constructed on Sixteenth, Geneva and Isabella streets.

Storm Lake, Ia.—Citizens are considering construction of a sewerage system.

Independence, Kan.—City has sold the \$40,000 west side sewer bonds to A. B. Leach & Co., of Chicago, for \$42,030.

Lexington, Ky.—Council is considering construction of sewers on Grosvenor and Kentucky avenues.

Hagerstown, Md.—Mayor Hammond has recommended the construction of a sanitary sewerage system.

Haverhill, Mass.—Council has ordered \$5,000 bonds for sewer construction work to be done this year.

Hudson, Mass.—Town is considering the installation of a sewer in Warner street.

Lenox, Mass.—Citizens have voted \$4,500 for sewers.

Monson, Mass.—Sewer Commission is considering the construction of a sewerage system.

Westfield, Mass.—Town has voted to drain the north and west sides of Park Square; cost, \$1,835.—O. E. Parks, Town Engineer.

Cadillac, Mich.—The Board of Public Works has advertised for bids for the construction of a sewer in Mitchell and Pine streets.

Epworth, Mich.—City is considering construction of a sewer system from Hotel Epworth to Lincoln River.

Duluth, Minn.—The force in the City Engineer's office is now at work preparing plans for six separate and distinct sewer systems, work on which will be begun this summer, provided the property owners are so inclined; one set of plans is for a sanitary main trunk sewer for Fifty-fourth avenue east, to drain a part of the Fourth division of Duluth, Lester Park, a portion of the London road territory and all of Crossley Park; second and third sets of plans are for sewers to drain that part of Woodland, west of Tischer's Creek and east of the golf grounds; fourth set is for a sanitary main trunk sewer to drain the district between Twenty-sixth avenue east and Thirty-second avenue east; fifth set is for a sanitary main trunk sewer in the district between Thirty-first and Forty-ninth avenue west and between St. Louis bay and the Duluth, Missabe & Northern railway tracks; sixth is for a sanitary main trunk sewer in the Raleigh street district, West Duluth, between the Missabe tracks

and the bay, with an outlet in the Forty-first avenue west trunk sewer; in addition to these, plans are now being prepared for a sanitary main trunk sewer along Garfield avenue, the first portion to run from Birch to Lynn avenues, and the second from Lynn to Pine avenues; Board of Public Works is now advertising for bids for the extension of the Ninth avenue east storm sewer; estimated cost of work, about \$8,000.

Mankato, Minn.—The Board of Public Works has submitted a report on the construction of a system of storm water sewers in seven districts; estimated cost \$36,000.—Dr. J. W. Andrews, Mayor.

Salesburg, Mo.—Council has authorized the extension of the sewerage and paving on South Division and Main streets; cost, \$20,000.

Missoula, Mont.—Council has ordered City Engineer Mayo to survey streets for a main brick sewer which would handle the sewage of the entire north side.

Florence, Neb.—F. H. Reynolds, City Engineer, has submitted to Council a comprehensive sewer plan for the entire city. Cost of the complete sewer is estimated at \$53,000 and is subdivided into sections; north main sewer is from Fifth and Jackson streets, east, south, east, south and east 16,000 feet, through the Omaha Water Company's property, to a point on the Missouri River 900 feet south of the water company's intake; a three-course brick sewer, six and one-half feet in diameter; estimated cost, \$20,800.

Nebraska City, Neb.—Plans will be prepared by City Engineer C. W. Pierce for two lateral sewer districts.

Dunellen, N. J.—Citizens have decided to join with Plainfield and North Plainfield to establish a joint sewage plant.

Haddonfield, N. J.—The Commissioners on Sewers have recommended the establishment of lateral sewers on portions of Haddon and Redmond avenues.

Hoboken, N. J.—The Board of Trade is urging the Hoboken Tax Board to set aside \$5,000 for the purpose of having an expert engineer devise a sewerage system.

Millville, N. J.—Council has decided to extend sewer mains on North Fourth street.

Perth Amboy, N. J.—Council has adopted a resolution for the laying of a 15-inch sewer in Neville street.

Albany, N. Y.—Council has passed ordinances for sewerage and paving Morris street and a sewer on Manning boulevard.

Syracuse, N. Y.—Commissioner of Public Works has estimated the cost of construction in a sewer in Lafayette avenue at \$1,001.

Yonkers, N. Y.—Bids will be received by the Board of Contract and Supply for constructing sewers in Center street and Center place and Cedar street.—J. D. McIntyre, Manor Hall, Secretary.

Greencastle, O.—City is considering construction of a sewer system.

Middletown, O.—Plans have been prepared by City Engineer for a trunk sewer to be constructed in Lakeside; cost about \$6,000.

Youngstown, O.—Council is considering construction of sewers in McKinley and Poland avenues, Fithian, Caledonia and Hiram streets; also passed a resolution authorizing the Board of Public Service to make a contract for connections for catch basins with the Glenwood avenue sewer.

Tulsa, Okla.—Citizens will vote on \$65,000 sewer bonds.

Athens, Pa.—Council has ordered a sewer placed on North Main street.

Chester, Pa.—Select Council is considering a bill increasing the city's indebtedness by \$600,000 for the extension and reconstruction of sewer system, general improvement of streets and other improvements.

Eddystone, Pa.—Borough has asked State for an extension of time in which to install a sewerage system.

Huntingdon, Pa.—House has passed the bill appropriating \$37,000 for sewage disposal plant to be installed at the Reformatory.

Johnstown, Pa.—President Jones, of Common Council, is urging the installation of a modern sewerage system.

McKeesport, Pa.—Plans will soon be prepared for a sewage disposal plant to cost about \$500,000.

South Bethlehem, Pa.—The Sewer Committee has recommended the laying of a sewer with laterals on New street to form a part of the system of house sewerage; Council has ordered profiles drawn for a sewer on Bishop Thorpe street.

Upland, Pa.—Engineer A. F. Dalmon, Darby, has prepared plans for the disposal of sewage; plans call for the sewerage of all borough streets; construction of plant would cost from \$10,000 to \$15,000.

Warren, Pa.—Council is considering the construction of a sewer on Elm street.

West Hazleton, Pa.—Sewer Committee is considering construction of a sewer in Green Ridge.

Gaffney, S. C.—Citizens have voted \$125,000 bonds for the installation of a sewerage system.

Newberry, S. C.—Council and Commissioners of Public Works are considering the extension of the sewerage system; cost about \$40,000.

Mitchell, S. D.—A vote will be taken at the spring election on issuing \$50,000 for sewer work.

Plankinton, S. D.—Council has negotiated the sale of bonds in the sum of \$8,000, which were authorized to be issued for the purpose of constructing a sewerage system; work of constructing the system will be commenced at once.

Binghamton, Tenn.—J. A. Omberg, Jr., Memphis, has been selected by Highland Heights and this city to make preliminary surveys and estimate cost of constructing independent sewer to connect with proposed sewer from Shelby County Poor and Insane Asylum to Wolf River.

Columbia, Tenn.—Plans are being prepared for the installation of a sewerage system.

Belton, Tex.—City is considering construction of sanitary sewer system; Thomas L. Fountain, Houston, has been selected to prepare plans and specifications.

Dallas, Tex.—Bids have been advertised for laying a sanitary sewer on South Pearl street.

Fort Worth, Tex.—The Tenth Ward Civic League is urging better sewer connections.

Yokum, Tex.—City will grant a franchise for the construction of a sewerage system.

W. F. Adams, City Secretary.

Leesburg, Va.—Council has authorized the Sewer Committee to employ engineer to prepare plans for a sewerage system.

North Yakima, Wash.—City has accepted profiles and specifications for the construction of 8,200 feet of sub-sewer and 2,200 feet of sidewalk.

Lancaster, Wis.—Bids will be received about June 1 for constructing gravity sewer.—David Schreiner, Clerk.

Plymouth, Wis.—Bids will be received in May for laying about 16,000 feet of 6, 8, 10 and 12-inch vitrified sewer pipe.—W. G. Kirchoffer, Madison, Wis., Engineer; C. W. Jackson, City Clerk.

Racine, Wis.—Special Committee has recommended that from the issuance of \$20,000 sewer bonds ten sewers be built, at a total cost of \$18,479.17.

Hamilton, Ont., Can.—The Sewer Committee has decided to construct sewers in Chase, Emily and Clinton streets; cost, \$16,000.

BIDS RECEIVED AND CONTRACTS AWARDED

Chico, Cal.—The contract for the construction of the auxiliary sewer system in East Chico has been awarded by the Committee, consisting of A. L. Neubarth, J. S. Waterland and M. C. Polk, to J. W. Terrell, city; his bid was \$3,895; work will be started at once. The contract calls for the laying of 800 linear feet of pipe and the construction of five flush tanks, ten manholes and six lamp holes. It will serve nineteen blocks and cost the property owners approximately \$30 per lot. An 8-inch main will connect the auxiliary with the present sewer system at Seventh street.

El Centro, Cal.—Frick & Ware, Los Angeles, have been awarded contract by the city at about \$26,000 for constructing a septic sewer system.

Denver, Col.—Bids were received March 27 for constructing sewers in sub-districts 2, 3, 4 and 6 of the North Denver Storm Sewer District No. 1 and contracts have been awarded as follows: To the Denver & Pueblo Construction Company, of Denver, \$22,625.50; and to the Denver & Pueblo Construction Company, of Denver, \$22,625.50.

ning foot; Pierce Mfg. Co., 98 cents and the Burns Co., 90 cents; Calderwood Place, D. B. Pierce, Jr., Co., 94 cents, and Pierce Mfg. Co., 98 cents; Madison Avenue, Pierce Mfg. Co., 93 cents, and the D. B. Pierce, Jr., Co., \$1.03.

Burnham, Ill.—Jirtle & Somes, Chicago Heights, have been awarded contract, at \$12,000, for constructing a sewer system for this place.

Farmer City, Ill.—The Board of Local Improvement, April 6, received bids for about 2 miles of combined sewers, requiring about 2,600 feet 33-inch concrete sewer and 8,000 feet 18 to 8-inch vitrified pipe, 33 manholes, etc., and the contract has been awarded to Howse Bros. Co., 120 Sangamon street, West Pullman, Chicago, for \$16,886.—C. D. Rock, Mayor.

Rock Island, Ill.—The Board of Local Improvements has let the contract for the building of the Ninth Street storm drain to the Tri-City Construction Company, of Davenport, Ia.; the 24-inch drain will be built from Fifteenth to Eighteenth avenue; there were three bidders; the Tri-City Company bid \$1.57 per foot, \$45 for catch basins and \$3 for rock; the Peoples Construction Company bid \$1.78 per foot, \$45 for catch basins and \$3.50 for rock; P. F. Trenkenshuh bid \$1.64 per foot, \$46 for catch basins and \$3.75 for rock.

Sioux City, Ia.—The lowest bid opened March 30 for the Smith's Villa storm sewer was submitted by J. M. Lewis, as follows: 48-inch brick sewer, \$3.80 per foot; 18-inch pipe sewer, \$1.05; 15-inch pipe sewer, 62 cents; catch-basins, \$39.50 each; manholes, \$38 each.

Topeka, Kan.—Proposals for the Kenwood sewer were opened Apr. 5, and the contract was captured by McGulre & Stanton, of Leavenworth, who made the lowest bid on the proposition—their bid being \$22,416.08, or almost \$10,000 less than the estimates made by the city engineer. The next lowest bid was from W. W. Cook & Son, of Junction City, who gave a bid of \$27,044.03. These bids were far below the other two bids which came from W. W. Gilmore, of Topeka, and the American Light & Water Company, of Kansas City.

Lexington, Ky.—Council has accepted the bid of Thomas O'Day for the construction of a sewer on Woodland avenue, from Main street to Central avenue.

Oakland, Md.—The Town Council, Apr. 5, awarded contract for sewerage system and water works reservoir to Wm. Tunny, of Joliet, Ill., for \$31,784.

Detroit, Mich.—The lowest bid received by the Board of Public Works for the construction of the Carbon avenue sewer was submitted by Julius Porath, 40 Fort street West, at \$29,800.

Millville, N. J.—Council at its April meeting opened bids for the sewage purification plant, and Thomas & Watkins, of Woodbury, submitted the lowest bid, it being \$22,224; the bids received were as follows: John Glinder, Trenton, \$23,586; United Paving Company, Atlantic City, \$33,200.04; Harrison Construction Company, Newark, \$22,625.50; Frank T. Queker, Philadelphia, no total; Suffolk County Construction Company, New York, \$40,375; Worser Goodman Construction Company, Montclair, \$23,803.10; Thomas & Watkins, Woodbury, \$22,224. The bids were referred to the Sewer Committee and Engineer to report.

Red Bank, N. J.—Contract for constructing the sewer in Maple avenue has been awarded by the Board of Commissioners to John F. Kerwin & Co., New Brunswick, N. J., at \$4,845; other bidders were: Albino Constructing Co., \$4,260; John McNabb, \$4,544; Monmouth Contracting Co., \$7,356; Street & Co., \$7,415.

the contract for the construction of a sewerage system to the South Shore Construction Co., of Erie; contract also calls for the preparation of the plans and specifications for a disposal plant.

Watertown, N. Y.—The contract for the Western Outfall sewer has been awarded to W. J. Semper, city, for reinforced concrete pipe, which will be made by Reinforced Concrete Pipe Company, Jackson, Mich. The earth excavation throughout the entire length of the sewer consists of sand saturated with water below a depth of three or four feet. The lower half of the sewer, where the thirty-six and thirty-three-inch pipes are to be laid, is underlain with Black River limestone, some of which will have to be excavated. The average cut for the 36-inch sewer is about 8 feet, of which about 3 feet is rock; for the 33-inch, average cut is about 8 feet, of which about 2 feet is rock; 30 and 27-inch will average about a 10-foot cut with no rock. Plenty of good sand for concreting will be excavated along the route of the sewer, and some of the stone excavated will be crushed. Eight bids were submitted, and the details of the successful bid, as calculated by City Engineer E. W. Sayles, follow:

Size	Length	Price	Amount
36-in.	2,800 ft.	\$8.33	\$23,324.00
33	2,600	5.39	14,014.00
30	1,760	3.65	6,424.00
27	2,264	2.56	5,795.84
36	2,800	rein. conc. block, Parrelly system	8.09 22,652.00
33	2,600	ditto	5.20 13,520.00
30	1,760	ditto	3.60 6,336.00
27	2,264	ditto	2.53 5,727.92
36	2,800	vit. tile in concrete	9.04 25,312.00
33	2,600	ditto	6.02 15,652.00
30	1,760	ditto	4.56 8,025.60
27	2,264	ditto	3.31 7,493.84
36	2,800	rein. conc. pipe, 4-ft. lengths	8.58 24,024.00
33	2,600	ditto	5.64 14,664.00
30	1,760	ditto	3.90 6,864.00
27	2,264	ditto	2.82 6,384.48
EXTRAS			
6-in. house conn.	100 ft.	\$0.35	\$35.00
6 Y's in conc.	350	.08	28.00
6 slants	350	.18	63.00
6 vit. Y's	350	4.80	1,680.00
Manholes	16	80.00	1,280.00
Lamp holes	6	16.00	96.00
Timber and plank, 10,000 m.f.b.m.		30.00	300.00
Extra concrete	1,000 cu.yds.	4.97	4,970.00
do. earth excav.	100 do.	.68	68.00
do. rock excav.	100 do.	3.25	325.00

Williamsport, Pa.—Bids for the construction of four sewers were opened, Apr. 2, and there were 22 bidders in all. For the house sewers in Newberry street, Market street and Railway street, John C. Schrade was low man, while Charles Dugan was lowest on the Second avenue sewer. The bids were as follows:

For constructing a house sewer in Newberry street, from Diamond street to Poplar street: J. W. Shadle, \$1,413; George Turner, \$1,396.05; Fred Dittmar, \$1,112.90; Busch & Stewart, \$1,297.55; Charles Dugan, \$1,202.96; John C. Schrade, \$1,092.

For constructing a house sewer in Market street, from Rural avenue, north to the city line: J. W. Shadle, \$1,392; Fred Dittmar, \$1,561; John C. Schrade, \$1,129.60; Busch & Stewart, \$1,223.50; Charles Dugan, \$1,250.50.

For constructing a house sewer in Railway street, from Washington street to East Third street: J. W. Shadle, \$385; Fred Dittmar, \$775; John C. Schrade, \$615; Busch & Stewart, \$757.50; Charles Dugan, \$789.50.

For constructing a storm water sewer in East Avenue from Louise street to Park

and Holley streets, and connecting with Fourteenth street; T. B. Barnesfield, \$1,174.72; J. A. Webb, \$949; Sullivan & Haggerty, \$1,094.40; John Broderick, \$1,109.40. Action on these bids was postponed.

Laying water main in Lockeland and Eastland: E. T. Lewis & Company, \$6,642.74; David Grewad Company, \$6,628.50; Sullivan & Haggerty, \$5,811.37; James Broderick, \$6,077 (awarded contract).

Nashville, Tenn.—The Board of Public Works has awarded a contract to Curtis & LeSueur to construct a sewer in alleys 617 and 619, between Hudson street and Eighteenth avenue, North, to cost \$1,275.85. The award of the contract for a catch basin system to be installed at Sixteenth avenue and Tremont street was held up pending an investigation by the City Engineer. J. A. Webb will receive this contract, his being the lowest bid. His bid was \$348. The Jakes Foundry Company and the Cumberland Foundry Company tied on their bids for crossing plates to be put in at the corner of Fourth and Russell streets, and they were asked to settle the matter between themselves by lots.

The bids received for the sewer were as follows: John Broderick, \$1,348; Sullivan & Haggerty, \$1,349.80; J. A. Webb, \$1,349.50; Curtis & LeSueur, \$1,275.85; T. V. Barnesfield, \$1,344.11; Dan Ellis, \$1,345.

The bids for the catch basin were as follows: T. V. Barnesfield, \$441.78; John Broderick, \$360; Sullivan & Haggerty, \$400; J. A. Webb, \$348; J. W. Quinn, \$359.50; Curtis & LeSueur, \$398.49; Dan Ellis, \$389.

The bids on the crossing plates were as follows: Robert Jakes Foundry Company, \$1.45 per 100 pounds; Cumberland Foundry Company, \$1.45; Stewart & Bruckner, \$1.50; Nashville Foundry Company, \$1.79.

Hubbard, Tex.—The contract for the construction of a sewer system has been awarded to Truehart & Jackson, of San Antonio.—H. C. Bishop is City Secretary.

Hoguliam, Wash.—City contract for improving portions of I and Eighth streets by clearing, filling and constructing storm and sanitary sewers, curb, cement, sidewalks and brick pavements, has been awarded to the Keasel Construction Co., of Tacoma, and the Little Falls Fire Clay Co.; total cost, \$127,000.—Z. T. Wilson, City Clerk.

Roanoke, Va.—Bids were opened by the Committee on Sewers, Apr. 3, and it recommended to Council the awarding of the contract to R. M. Bibb, city, for the construction of 660 feet of double strength terra cotta pipe, including back filling, digging, furnishing and laying also the necessary manholes and catch basins.—W. B. Bates, City Engineer.

Winchester, Va.—The contract for trenching and laying sewer pipes was awarded to Irwin Bros., of Greenville, O., their bid being about \$33,000. Seventeen other firms submitted bids; work is to begin within thirty days, and it will require six or seven months in which to complete the contract.

Jefferson, Wis.—Contract for constructing 13,000 feet sewers has been awarded to James McCabe, of Fond du Lac, for \$7,454.—G. J. Loetz, City Clerk.

WATER SUPPLY

Montgomery, Ala.—Mayor Teague has authorized a \$200,000 bond issue for the improvement of the water works, schools and erection of a wharf.

Bisbee, Ariz.—The Bisbee-Waco Water Company is considering installation of a reinforced concrete storage tank, one of 1,000,000-gallon capacity, the height not to exceed 50 feet.

Conway, Ark.—City is considering establishment of water works system; reservoir

Bridgeville, Del.—City will issue bonds for installation of water works and sewerage.

Delmar, Del.—State Legislature has passed bill providing for the construction of water works.

Washington, D. C.—A report has been received from an American Consul in Latin America in which he states that the municipality in which he is located contemplates the construction of a water works and sewerage system, work on which will be started in the near future. While the specifications have not yet been prepared, the consul suggests that firms in the United States might do well to communicate with the person who is the head of the municipal committee having the matter in charge. He also states that a local engineer will visit the United States in regard to the material needed for the work, and it may be possible for American firms to communicate with him at that time. Address No. 3288, Bureau of Manufacturers.

Jacksonville, Fla.—Bids have been advertised for certain kinds of pipe that would be required for the extension of fire mains and general water supply.

Mulberry, Fla.—L. N. Pipkin will erect 50,000-gallon tank and lay 6-inch water mains throughout city.

Palmetto, Fla.—Plans have been completed by Benjamin Thompson, Tampa, for proposed system of water works; \$15,000 bonds available.

Quincy, Fla.—Citizens will vote April 27 on \$36,000 bond issue for water works improvements and extension.—B. A. Puckett, Superintendent Water and Light Plant.

South Jacksonville, Fla.—Citizens have defeated a \$5,000 bond issue for water and sewer systems.

Augusta, Ga.—Council is considering a \$10,000 appropriation for extension of water mains.—Nisbet Wingfield, City Engineer.

Douglasville, Ga.—Mayor J. R. Hutcheson desires prices on engines, boilers, generators, etc., for electric light plant.

Perry, Ga.—Hazlehurst & Anderson, Consulting Engineers, Atlanta, Ga., are preparing plans for a water system; estimated cost, \$15,000.

Toccoa, Ga.—J. B. McCrary & Co., Atlanta, Ga., will survey to ascertain cost of installing filter at water works.—Dr. John Edge, Chairman Committee.

Aurora, Ill.—The Board of Public Works has voted to extend water mains in a number of streets.

Bloomington, Ind.—Legislature has appropriated \$20,700 for securing a water supply for the Indiana University of Bloomington; Board of Trustees has decided to sink test wells.

Fort Wayne, Ind.—The Board of Works will extend water mains as soon as weather permits; first work will be done on Requa avenue, State, Smith, Koch and Thomas streets and Eckert lane.

Fort Wayne, Ind.—City Water Works has a balance of \$32,000 which will be used for extensions and improvements.

Hazleton, Ind.—The organization of the Hazleton Water Company to install and operate a water works system has been completed; H. P. Phillips is President; A. C. Heise, Vice-president; E. B. Loudin, Treasurer, and C. I. Howard, Secretary; water supply will be obtained from White River; system is to be completed by July 1.

Indianapolis, Ind.—The new engineering corps of the Board of Park Commissioners has begun a survey of Pogue's run, in Brookside Park, to gather information for a dam which the Board will build in the stream.

Richmond, Ind.—Council is considering the improvement and construction of an addition to the water works plant.

Vincennes, Ind.—Fire Chief Fendrick has petitioned Fire Board to have two new fire

to buy land around Spring Pond to protect water supply.

Sudbury, Mass.—Town is considering the securing of a water supply.

Ann Arbor, Mich.—Bids will be received for two carloads of wrought-iron pipe, black and galvanized.—Shirley W. Smith, Secretary, University of Michigan.

Coleman, Mich.—Plans are being prepared by Engineers Riggs & Sherman, 613 Nasby Building, Toledo, O., for a complete system of water works.

Minneapolis, Minn.—The Citizens' Committee on Legislation has acted favorably on \$1,000,000 bond issue for pure water.

Corinth, Miss.—City has sold \$25,000 improvement bonds to the First National Bank; money will be used to extend water plant and repair streets.

New Augusta, Miss.—Citizens are considering plans for an artesian well.

Mexico, Mo.—Plans are being prepared by Consulting Engineer Wm. B. Bryan, Lincoln Trust Building, St. Louis, for improvements to the water works system; cost, \$35,000.

Helena, Mont.—City will receive bids till May 1 on \$600,000 water bonds.—J. A. Mattson, City Clerk.

Omaha, Neb.—Citizens will soon vote on \$6,500,000 bonds for the purchase and improvement of the water works system.

New Hampton, N. H.—Citizens have voted to establish a water system; distributing reservoir will be built near the Gordon Hill road; \$8,000 bonds will be issued.

Chatham, N. J.—The Board of Water Commissioners is considering the extension of water mains on Maple street, North Hillside and Summit avenues; total distance, 4,000 feet.

Elmer, N. J.—Citizens will vote April 15 on construction of a municipal water works.

Hoboken, N. J.—House has passed the bill authorizing the issue of \$35,000 water bonds to relay, enlarge and extend water mains.

Keasby, N. J.—The Keasby Water Company will be formed to construct and maintain a water works system.—C. R. Hockerbury is interested.

Princeton, N. J.—Town is considering the construction of a municipal water works.

Buffalo, N. Y.—City has sent to Albany a bill bonding city for an additional \$1,000 for water works improvements.

Buffalo, N. Y.—The Board of Aldermen is considering a resolution directing Commissioner of Public Works Ward to advertise bids for an additional steam pump, capacity 30,000,000 gallons, immediate delivery, as an auxiliary to the pump recommended by the Commissioner.

Corning, N. Y.—Declaring that the water flowing from the city water system taps is at present little better than dilute sewage, and that unless the utmost caution is observed a recurrence of the C. O. D. epidemic with possible typhoid complications is certain, Prof. Harry W. Redfield, Board of Health expert, has recommended to that official body the erection of a \$20,000 ozone plant as the most practical and most economical solution of the menace which now faces the city.

Franklinville, N. Y.—Town will lay 1,000 feet of 6-inch pipe.

Keeseville, N. Y.—Plans are being prepared by Consulting Engineer Wm. G. Stone, Utica, N. Y., for a new water supply system for the village.—E. K. Romeson, Clerk, Water Commissioners.

Lockport, N. Y.—The Committee on Streets has approved of the petition for a main in the State Road from South Transit to High street.

Newburgh, N. Y.—The Water Board has estimated that \$153,000 is necessary for the enlargement of the water works; election